LEACH®

Alpha • Beta • Delta

Service Manual

Over Serial Number 3500

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Part No. 105282

TO ORDER PARTS

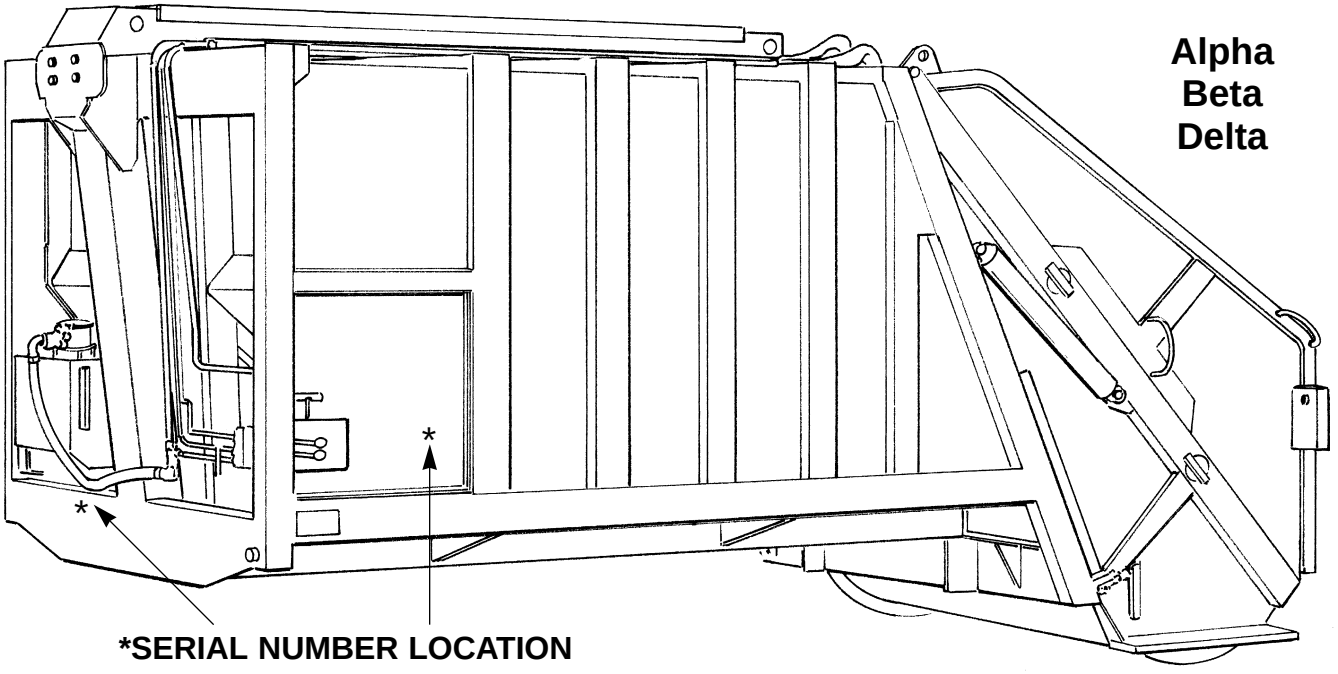
Contact your local Leach Signature Original Factory parts distributor

Your Authorized Leach Distributor

provide the following information:

A. Company name
B. Date
C. Your order number
D. Routing instructions
E. Quantity, part number and description
*F. Model and serial number of unit

Accept only Leach Signature Original Factory Parts.



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PREFACE

The Alpha, Beta and Delta rear loaders over serial number 3500 share many safety, operational and design similarities. This manual combines the necessary information for these models into one publication.

FOREWORD

The Leach Company has been a leader in the refuse industry for over 100 years. The Leach Alpha is the industry standard for both quality and performance. We at the Leach Company are justifiably proud of the quality engineering, material and workmanship that goes into each and every packer we produce. This commitment to quality extends to the best parts, service and distributor organization in the industry.

One area of great importance to us at the Leach Company is your safety. This unit was built in accordance with the American National Standards Institute (ANSI) standard for Mobile Refuse Collection and Compaction Equipment — Safety Requirements, ANSI Z245.1 - 1992. Before operating this unit please read and understand the safety precautions found in Section 1 of the Service and Operators manual. They are important and are provided to assist you in the safe operation of the unit.

This manual was produced with the intention of providing clear, concise instructions for the proper operation and servicing of your refuse packer. It was produced with the latest information available at the time of publication. We do, however, reserve the right to redesign and/or discontinue the manufacture of parts, components or assemblies at any time. The Leach Company has an aggressive manual and product improvement program. In any conversation or correspondence dealing with information provided in any Leach manual please refer to the part number of that manual located in the lower right hand corner of the front cover.

The manuals provided with the unit are considered a permanent part of the unit and should be included in the event of a resale. Additional manuals are available, free of charge, from your local authorized Leach distributor. These manuals should be kept readily available for easy reference. We ask that if you have comments or suggestions concerning this manual please contact us at (920) 231-2770. We are here to be of service to you, our valued customers.

LEACH Signature™ Original Factory Parts

Refuse bodies manufactured by Leach Company, ("Company") are supplied and sold under a Limited Warranty that they are and will remain free of defects in workmanship or material for a period of six (6) months from date of original sale under reasonable conditions of use and operation, providing required preventive maintenance services are performed. Additional optional warranties are available for purchase. If a failure occurs during said period because of such defect in the opinion of the Company, the component or part shall be repaired or replaced by an authorized Leach Distributor at no cost to the customer provided the unit is brought to the distributor's service facility. After three (3) months, performance of adjustments or the replacement of wear/expendable components is not covered under warranty. This limited warranty is the sole and exclusive warranty of the Leach Company.

THE COMPANY MAKES NO WARRANTY AS TO MERCHANTABILITY, FITNESS FOR USE, LEGALITY OF OPERATION IN ANY JURISDICTION OR ANY IMPLIED WARRANTY OF ANY KIND OR NATURE. THE COMPANY SHALL NOT BE LIABLE FOR ANY SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND OR NATURE, OTHER THAN ITS LIMITED WARRANTY OF REPLACEMENT HEREIN. NO OTHER PERSON, FIRM OR CORPORATION CAN BIND THE COMPANY TO ANY WARRANTY OTHER THAN HEREIN ABOVE STATED.

To validate the new unit warranty, an authorized Leach distributor must have completed a pre-delivery inspection before the unit is placed into service, and the delivery report form signed by both the customer and distributor must be submitted to the Leach Customer Support Service Department.

Because Company products are engineered to work only with genuine Company parts, this limited warranty will be void and no effect if: (a) Company products are modified other than as done at its factory or as authorized to be done by the factory in writing; or (b) Parts or assemblies of any other manufacturer are used as substitutes for genuine Company parts.

Genuine Leach replacement parts, components and assemblies are also sold under a Limited Warranty to be free from defects in workmanship or material for a period of six (6) months. This is a replacement only warranty and the item must be returned to the Leach distributor for exchange. The labor to replace or repair the part shall be the responsibility of the customer. There is no warranty on expendable items, wear components or used parts.

Leach Company reserves the right to redesign and/or discontinue the manufacture of parts, components and assemblies at any time.

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SAFETY PRECAUTIONS

GENERAL

The Alpha, Beta and Delta have been designed with the operator in mind. However, as with any industrial machinery, especially those that are large and apply forces through hydraulic pressures, the ultimate responsibility for safety rests with you — the user. An alert, conscientious attitude and observance of all known safe operating practices are the best ways to prevent accidents.

Before operating the unit it is the operator's responsibility to be thoroughly familiar with the instructions contained in the Operator's Manual.

Publication of these precautions does not imply or in any way represent an all inclusive list. It is the operator's responsibility to be familiar with and ensure that operation is in accordance with safety requirements and codes including all applicable Occupational Safety & Health Act (OSHA) and American National Standards Institute (ANSI) regulations.

DANGER, WARNING AND CAUTION DECALS

See the accompanying illustration for the location and label content of all safety decals.

1. These decals must be obeyed at all times.
2. These decals must be in place at all times. Report any damaged or missing decals to the proper authority at once.
3. Replacement decals can be ordered free of charge from your local authorized Leach distributor.

DANGER WARNING AND CAUTION

Throughout this manual "DANGER" "WARNING" and "CAUTION" notations accompanied by the International ⚠ Hazard Symbol are used to alert the operator and mechanics to special instructions concerning a particular operation or service that may be hazardous if performed incorrectly or carelessly.

DANGER — Immediate hazards which WILL result in severe personal injury or death.

WARNING — Hazards or unsafe practices which COULD result in severe personal injury or death.

CAUTION — Hazards or unsafe practices which could result in minor personal injury or property or product damage.

Strict compliance to these "safety alerts" combined with "common sense" operations are important accident prevention measures.

The word **NOTE** is also used throughout the manual. It precedes information that provides special emphasis or clarification on a specific operation or procedure.

SAFETY PRECAUTIONS

PRIOR TO START UP

1. Never operate machinery while wearing jewelry or loose clothing. These items may become caught by or entangled in the machinery causing serious injury. Wear proper safety equipment as required by your employer.

2. Never operate machinery while under the influence of alcohol, narcotics or other mood altering substances. Workers who operate machinery while under the influence are a hazard to themselves and others.

3. Perform a pre-operation “walk around” inspection of the truck chassis in accordance with the chassis manufacturer’s guidelines. Perform a “walk around” inspection of the refuse packer in accordance with the checks listed in Section 3 - Operation of the Operators/Service manual. Never start or operate any equipment found to have malfunctions.

    a. Report any malfunctions immediately to the proper authorities.

    b. Prior to leaving any malfunctioning unit the parking brakes must be set, the PTO system disengaged, the engine turned off, the ignition key removed, and using a non-reusable fastening device, place a sign on the steering wheel indicating the unit is inoperative.

4. Proper servicing requires specialized tools and procedures. Service must be performed by authorized personnel only following procedures in the Service manual.

5. Walk completely around the vehicle to make sure all persons and obstructions are clear before starting the unit.

6. The container handling system is a critical component of the unit, use only the proper replacement parts.

7. Inspect all hooks, chains and cables daily to ensure serviceable condition. Replace damaged or worn parts. (See Section 5, Preventive Maintenance)

8. Before operating the vehicle the driver must be thoroughly familiar with the employer’s safety program concerning traffic rules, warning devices and hand signals.

9. Be sure to know where to get assistance in the event of an emergency.

10. Know your machine. Know the location and function of all controls, gauges, instruments and protective devices.

11. Should the height of a refuse collection vehicle be altered by installing a container handling system, be sure the overall height is rechecked and overall height plus 3 inches is noted on the decals.

SAFETY PRECAUTIONS

OPERATION
GENERAL

1. It is the operator's responsibility to ensure that operation of the unit is in accordance with the guidelines contained in the Operator's manual and in accordance with all applicable codes including Occupational Safety and Health Act (OSHA) and American National Standards Institute (ANSI) regulations.
2. Do not attempt to operate this equipment without proper training.
3. Move the vehicle as slowly as possible without stalling when traveling in reverse.
4. Always make sure the area behind the unit is clear before traveling in reverse.
5. Do not travel in reverse for distances greater than those dictated by local ordinances. If reverse travel exceeds 10 feet, use a "spotter" or move the vehicle in 10 foot increments only, and then check to make sure the area behind the unit is clear between increments.
6. Do not attempt to dislodge any material above waist level unless wearing eye protection such as "approved" side shielded safety glasses or a full face shield.
7. Never use the unit to push or tow another vehicle.
8. Never unload uphill or against a pile of refuse or into the bank of a hill.
9. Never place head, body, fingers or any limbs into a scissors point or pinch point on the equipment.
10. Before operating the vehicle the driver must be thoroughly familiar with the employer's safety program concerning traffic rules, warning devices and hand signals.
11. Know where to get assistance in the event of an emergency.
12. Know your machine. Know the location and function of all controls, gauges, instruments and protective devices.
13. Wear your seat belt.
14. Start the engine following the manufacturer's recommended procedure.
15. Always set the parking brake before leaving the cab.
16. Turn on appropriate warning lights, put on a safety vest, protective glasses and protective shoes.
17. All service opening covers and access doors must be maintained and latched in place while operating equipment.
18. Ensure all co-workers are in view before operating or moving any controls or the unit.
19. Ensure that there is sufficient overhead clearance before operating the unit.
20. Ride only in the cab or on riding platforms designed for that purpose. Riding steps shall not be used when speeds are expected to exceed 10 mph or when distance traveled without stopping will exceed 2/10 of one mile. Do not mount or dismount riding step when vehicle is in motion.
21. Never allow anyone to ride on the steps when the vehicle is backing up.
22. Stop the vehicle immediately if warning lights for the TAILGATE AJAR system come on.
23. Never use controls or hoses for hand holds when mounting or dismounting. Controls and hoses are movable. They do not provide proper support and may cause accidental equipment movement.
24. Make sure the backup alarm is working properly.
25. Always ensure that all persons are clear before raising or lowering the tailgate. It is the operator's responsibility to warn all persons not to stand or cross under a raised tailgate.
26. Do not move the vehicle with the tailgate raised except during unloading and then only as necessary to clear the load before lowering.
27. Stand clear when the tailgate is being raised or lowered and during the unloading cycle. If it is necessary to manually clear debris from the hopper, use a long metal probe and DO NOT stand under the tailgate.
28. Never load the hopper above the loading sill.
29. Never allow material to extend outside of the hopper when packing.
30. Allow the packer panel control lever and carrier panel control lever to shift automatically.
31. To avoid possible bodily injury or equipment damage, lower the tailgate slowly.
32. Never enter the body unless the pressure in the telescopic ejection system cylinder is released, PTO disengaged and ignition key removed and placed in your pocket.
33. Do not attempt to load refuse into the hopper after

SAFETY PRECAUTIONS

the packing cycle has begun. The packer panel must be in the “home” position and stopped before loading the hopper.

34. The dashboard solenoid switch must be “OFF” between pickups or when parked. This prevents inadvertent engine speed-up if the tailgate carrier panel control lever is shifted.
35. The tailgate clamps must be tightened securely before starting to load.
36. Do not step on the throttle pedal while the speed up system is engaged.
37. Vehicles with automatic transmissions require the shift lever to be in gear to engage the PTO and then shifted to neutral to activate the PTO/pump.
38. Never use a rear loader to transport a container.
39. Follow all safety directions listed in the refuse body Operator and Service manual under SAFETY PRECAUTIONS.
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40. Never use container handling chains or cable for towing or pulling.
41. When not handling containers, keep the container attachment closed and latched.
42. Do not operate the rear loader’s packing mechanism with a container off the ground.
43. If it is necessary to manually free debris from the container, use a long metal probe while the container is on the ground, and DO NOT place yourself between the container and the packer body.
44. Attach hook to the tailgate and take up the excess slack when not in use.
54. Never hold the hook on an attachment point while taking up slack.
46. Take up excess cable slack before moving the vehicle.
47. Check overhead clearance before dumping a container.
48. Do not move the vehicle with a container attached.
49. Always set the vehicle parking brake before attaching or lifting a container.
50. Never lift a container which is non-compatible with the Leach container attachment.
51. Never lift a container without first latching both container latch arms.
52. Raise the container with a smooth even movement. Do not bounce the container.
53. Do not slam the container against the packer tailgate or bump bar.
54. Do not attach the hook to any lift point which will not be completely encircled by the hook with the safety latch closed. Do not remove the hook safety latch.
55. Read and obey all container decals issued by the container manufacturer.
56. Read and follow container manufacturers information on accepted use practices.
57. Do not attempt to lift overloaded containers.
58. Center the container on the attachment.
59. All containers should be inspected for serviceability and repaired if not in a safe, usable condition.
60. Do not use a non-standard or damaged trunnion bar.
61. Never cross under a raised container.
62. Stand clear when dumping containers.
63. Before attempting to lift a container, below 32°F (0°C) make sure it is not frozen to the ground.
64. When using an eye type container attachment point, the base of the hook must be positioned to lift on the inside of the eye.
65. Place the container on a flat, level surface.

SAFETY PRECAUTIONS

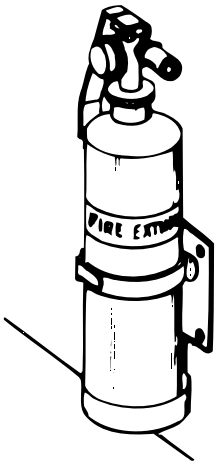
HYDRAULICS

1. Hydraulic fluid operates under high temperatures. Avoid contact with piping, hoses or cylinders to prevent burns.

2. Never use hands to check for leaks. Hydraulic fluid escaping under pressure may cause injury.

3. In case of injury seek proper medical treatment immediately.

FIRE PROTECTION



1. Keep a fire extinguisher accessible at all times, as recommended by the Bureau of Motor Carrier Safety.

2. Never use lighted smoking materials, open flame or sparks around when working with flammable materials such as fuel tanks or storage batteries.

3. Never have an open flame as a light source.

4. Never load ashes or other materials which might be smoldering. These materials could ignite refuse in the packer body.

HOUSEKEEPING

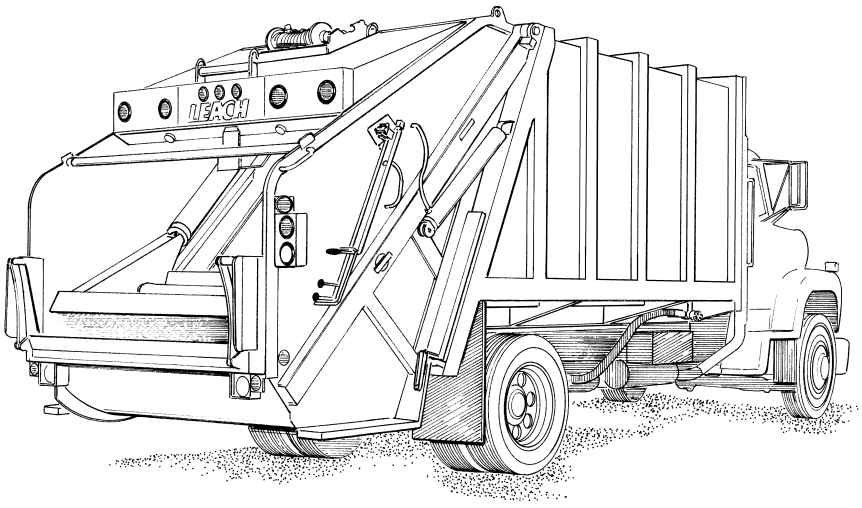
Good housekeeping habits are a major factor in accident prevention.

1. Keep handrails and steps clean and free of grease or debris.

2. Do not store brooms or other equipment where they could inadvertently activate the packer controls.

3. Rubbish, scrap paper and litter are highly combustible. Such material should be stored in metal containers entirely clear of sparks and flames.

SHUTDOWN



1. Put all controls in neutral.

2. Set parking brake.

3. Disengage PTO.

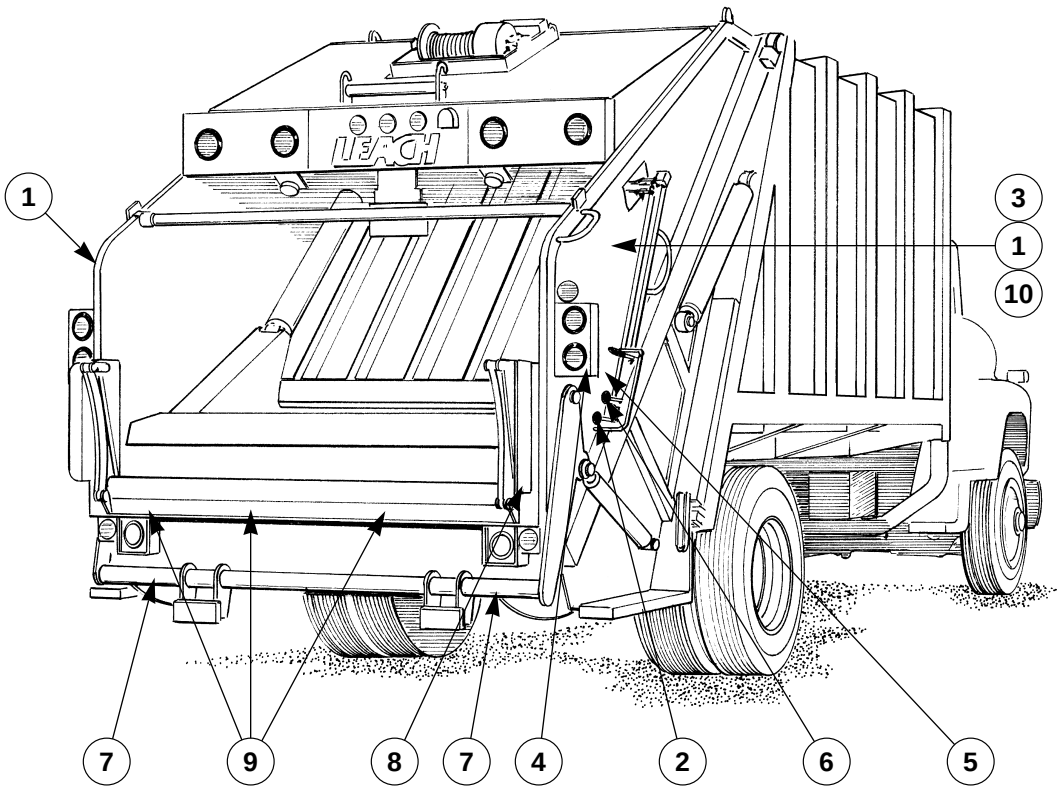
4. Shut off engine.

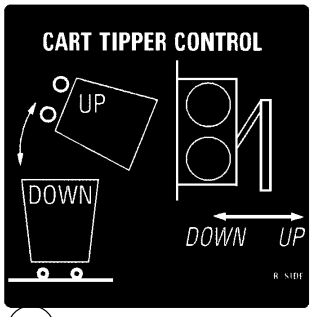
5. Shut off solenoid dashboard switch.

6. Remove key.

7. Lock vehicle.

SAFETY PRECAUTIONS

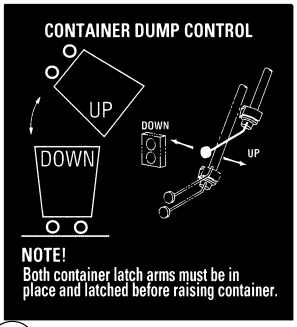




1

PACKER
PACKER
PACKER

2



3

ENGINE
SPEED-UP

4

PACKING OPERATION INSTRUCTIONS
BEFORE OPERATING THIS MACHINE, BE SURE TO READ AND UNDERSTAND OPERATION MANUALS SUPPLIED WITH THIS UNIT. REPLACEMENT MANUALS CAN BE OBTAINED FROM A LEACH DISTRIBUTOR.
I MOVE BOTH LEVERS INWARD AND RELEASE TO START PACKING CYCLE
II MOVE BOTH LEVERS OUTWARD AND RELEASE TO FINISH PACKING CYCLE
* Packing cycle may be stopped at any point by moving operating levers to neutral.
* Packer or Carrier plate can be moved independently as shown.
MOVE CONTROL INWARD FOR CARRIER DOWN
MOVE CONTROL OUTWARD FOR CARRIER UP
MOVE CONTROL INWARD FOR PACKER OPEN
MOVE CONTROL OUTWARD FOR PACKER CLOSE
Note 1: When loading hopper, do not load refuse higher than loading edge.
Note 2: When body is full, operate packer controls as outlined in operator's manual only.
WARNING
Be sure all persons are clear of hopper opening before operating controls.

5

CARRIER
CARRIER
CARRIER

6

NO STEP

7

WARNING
CONTAINER FALLING/ SWINGING HAZARD
• While container is off the ground
• Insure both container latch arms are latched
• Do not operate packing cycle
• Do not stand or cross under
Latches will secure straight container trunnion/ pivot bars which meet ANSI Z245.6 container dimensions shown below:
77 1/2 in - 78 in
72 in max
The container attachment on this compactor as originally mounted is compatible with ANSI Z245.6 containers.

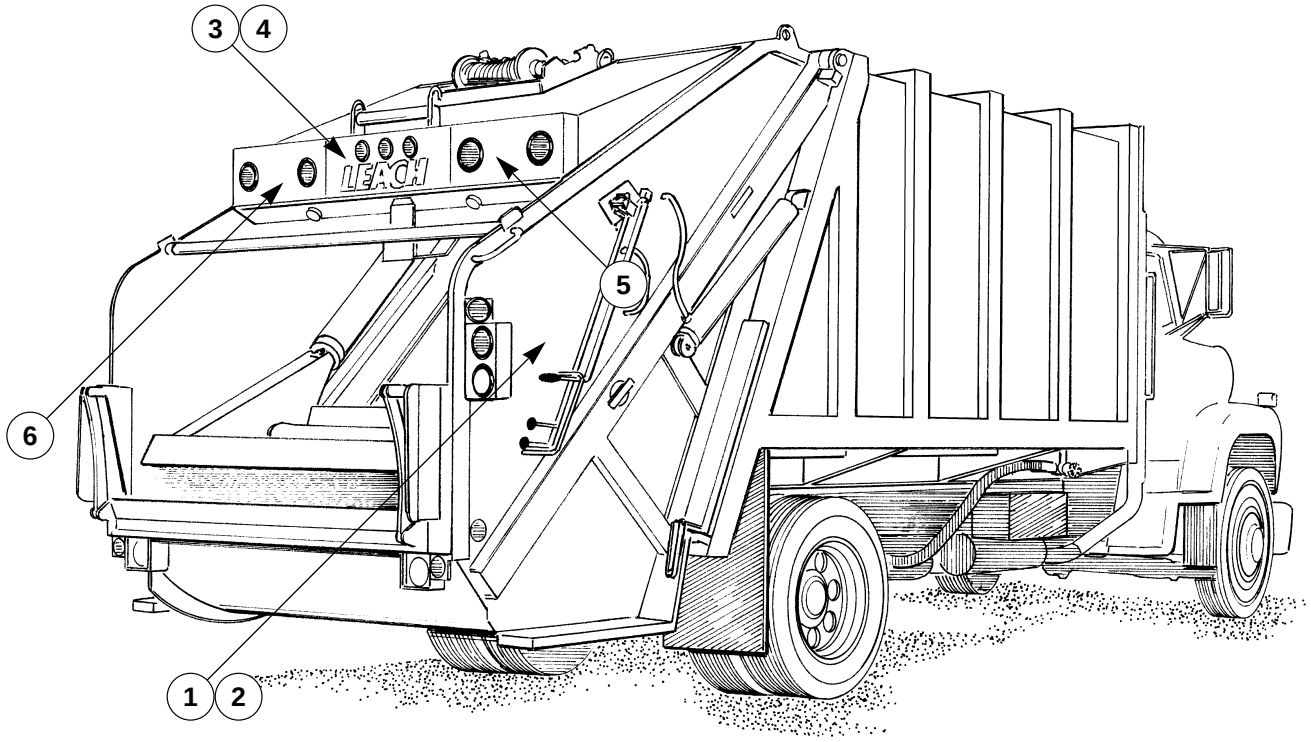
8

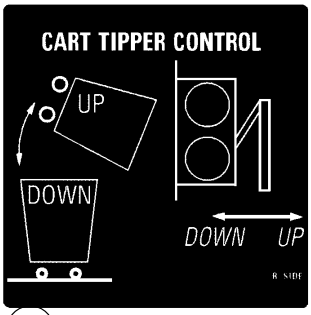
9

WINCH
WINCH
WINCH

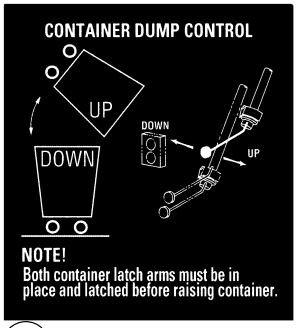
10

SAFETY PRECAUTIONS





1



2

3

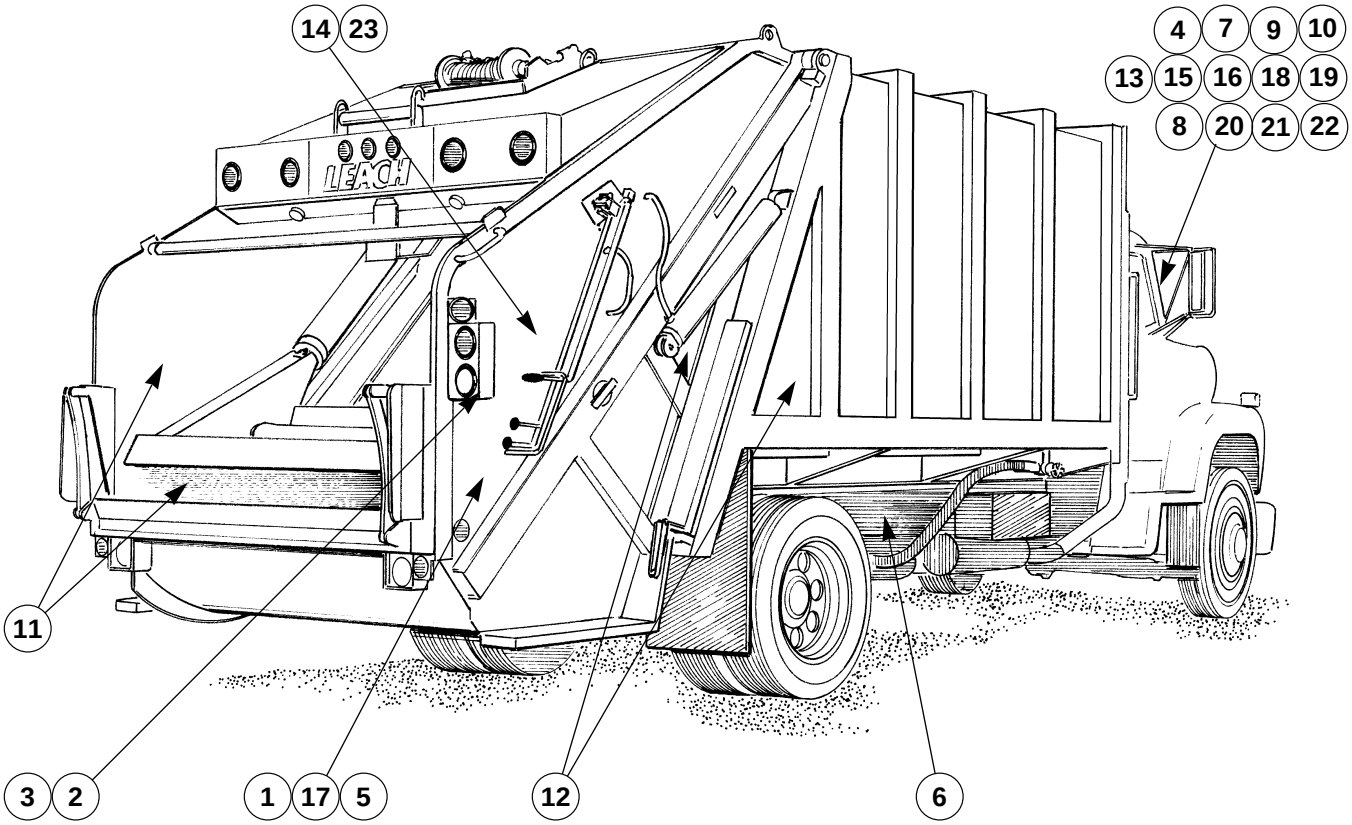
4

5

WARNING
To prevent possible serious injury or death, do not use this refuse collection vehicle to tow other equipment. It is not intended, designed or equipped for towing.

6

SAFETY PRECAUTIONS



PACKER
PACKER
PACKER

1

ENGINE
SPEED-UP

2

DRIVER SIGNAL

3

BEACON LIGHT
ON OFF

4

CARRIER
CARRIER
CARRIER

5

WARNING

- Rotating power take off shaft hazard.
- Do not enter under chassis unless engine is stopped and key removed.

6

PTO

7

WARNING

YOU MUST NOT OPERATE OR SERVICE THIS MACHINE UNLESS:

- You are qualified by training and experience in the safe operation of this machine.
- Training includes complete knowledge of your employer's work rules, all governmental regulations, and manufacturer's operator and safety manuals relative to this machines safe use.

AN UNTRAINED OPERATOR SUBJECTS HIMSELF AND OTHERS TO DEATH OR SERIOUS INJURY.

8

CAUTION

Serious pump damage will result if vehicle is operated at highway speed with pump engaged. Move unit with pump engaged only as required to perform its function as a refuse collection/compaction vehicle at speeds less than 10 mph.

9

CAUTION

Serious pump damage will result if pump is run dry. Disconnect pump drive to run engine if tank valve is required to be closed or if oil tank is not at proper fill level.

10

SAFETY PRECAUTIONS

11

12

WARNING
To prevent possible serious injury or death, do not use this refuse collection vehicle to tow other equipment. It is not intended, designed or equipped for towing.

13

WARNING
• Falling hazard.
• Do not operate vehicle at speeds in excess of 10 mph, for distances over 2 tenths mile or in reverse gear when rider or riders are on riding steps.

14

15

16

PACKING OPERATION INSTRUCTIONS
BEFORE OPERATING THIS MACHINE, BE SURE TO READ AND UNDERSTAND OPERATION MANUALS SUPPLIED WITH THIS UNIT. REPLACEMENT MANUALS CAN BE OBTAINED FROM A LEACH DISTRIBUTOR.
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• Packer or Carrier plate can be moved independently as shown.
MOVE CONTROL INWARD FOR CARRIER DOWN
MOVE CONTROL OUTWARD FOR CARRIER UP
MOVE CONTROL INWARD FOR PACKER OPEN
MOVE CONTROL OUTWARD FOR PACKER CLOSE
Note 1: When loading hopper, do not load refuse higher than loading edge.
Note 2: When body is full, operate packer controls as outlined in operator's manual only.
WARNING Be sure all persons are clear of hopper opening before operating controls.

17

18

19

20

WARNING
• Do not transport container on lift mechanism.
• Transporting a container could result in personal injury or property damage.

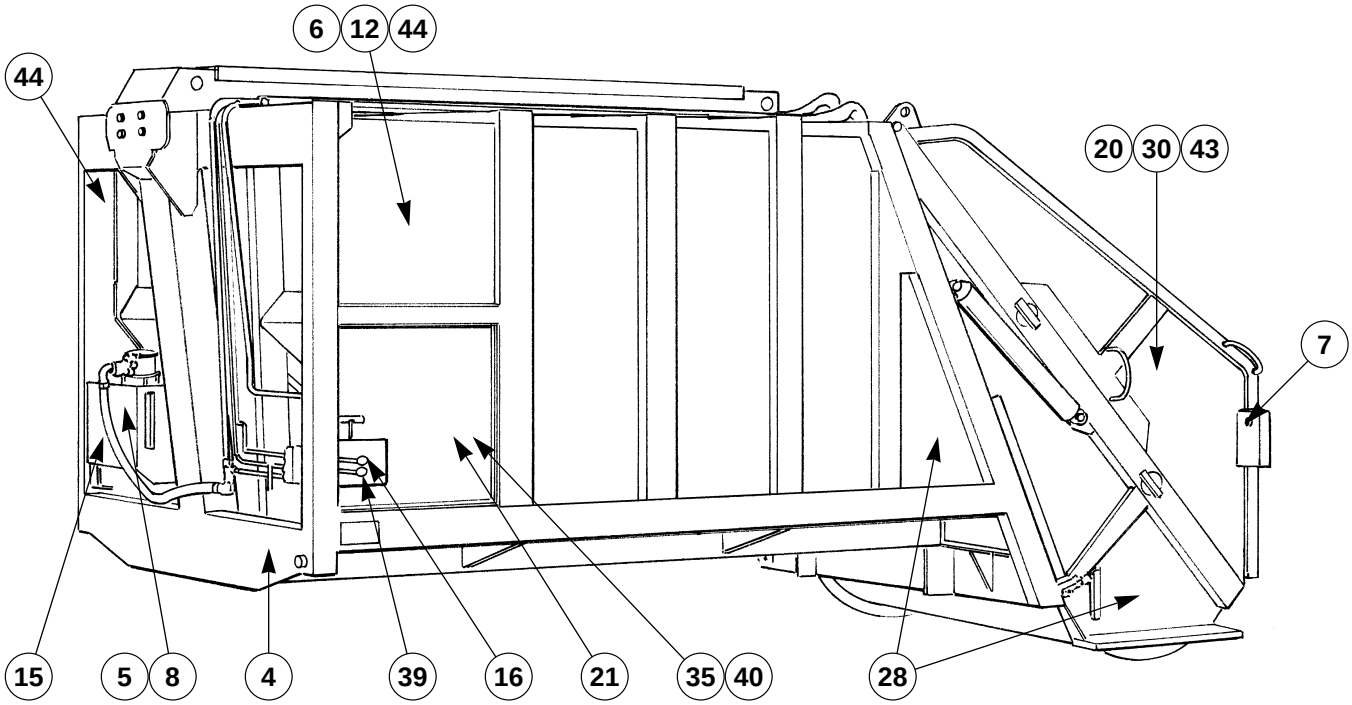
21

22

WARNING
• Stand facing truck side. Use both hands on grab handles.
• Riding step shall not be used when:
• Speeds are expected to exceed 10 mph or when distance traveled without stopping will exceed 2 tenths of one mile.
• Vehicle is moving backward.
• Do not mount or dismount riding step when vehicle is in motion.
• Do not ride on loading sill or on container attachment.

23

SAFETY PRECAUTIONS



ENGINE SPEED-UP

4

HYDRAULIC FLUID ONLY

5

This unit conforms to all American National Standards Institute safety requirements Z 245.1 in effect on the date of manufacture.

LEACH

6

DRIVER SIGNAL

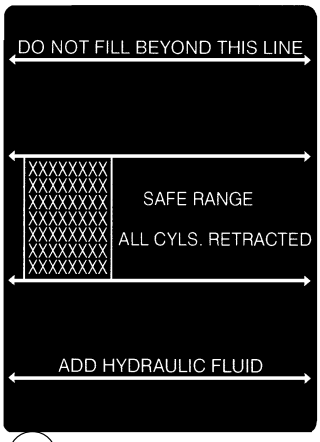
7

FILTER ELEMENT CHANGE

To ensure oil cleanliness and longer machine life, change the element at intervals of 20hrs, 50hrs, and at 250hr intervals thereafter.

8

12



15

EJECTION EJECTION EJECTION

16

⚠ WARNING

YOU MUST NOT OPERATE OR SERVICE THIS MACHINE UNLESS:

- You are qualified by training and experience in the safe operation of this machine.
- Training includes complete knowledge of your employer's work rules, all governmental regulations, and manufacturer's operator and safety manuals relative to this machines safe use.

AN UNTRAINED OPERATOR SUBJECTS HIMSELF AND OTHERS TO DEATH OR SERIOUS INJURY.

20

WARNING

- Keep access door closed when ejector panel is in motion.
- Use only the side access door to enter or exit the body.
- Do not open access door unless:
  - all pressure against ejector panel has been relieved.
  - engine is stopped and key removed.

21

35

⚠ DANGER

- Stand clear when tailgate is in motion & during unloading cycle.
- Do not stand or cross under raised tailgate.

28

⚠ WARNING

- Falling hazard.
- Do not operate vehicle at speeds in excess of 10 mph, for distances over 2 tenths mile or in reverse gear when rider or riders are on riding steps.

30

WARNING
Stand facing truck side. Use both hands on grab handles.
Riding step shall not be used when:
Speeds are expected to exceed 10 mph or when distance traveled without stopping will exceed 2 tenths of one mile.
Vehicle is moving backward.
Do not mount or dismount riding step when vehicle is in motion.
Do not ride on loading sill or on container attachment.

43

TAILGATE TAILGATE TAILGATE

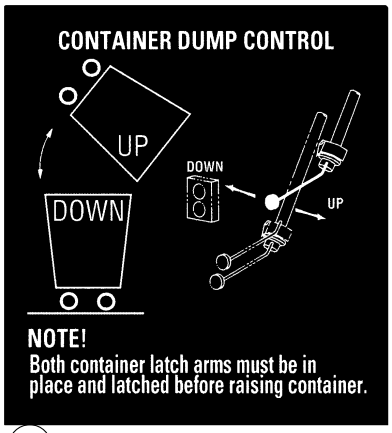
39

40

44

LEACH

SAFETY PRECAUTIONS



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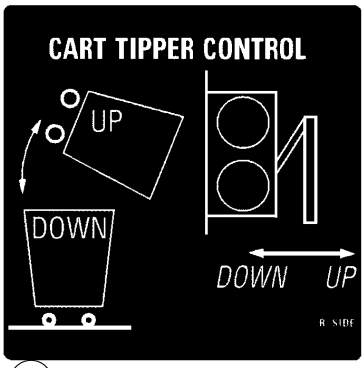


1

PACKER
PACKER
PACKER

2

HYDRAULIC
FLUID ONLY

5

ENGINE
SPEED-UP

4

This unit conforms to all American National Standards Institute safety requirements Z 245.1 in effect on the date of manufacture.

LEACH

6

DRIVER SIGNAL

7

FILTER ELEMENT CHANGE

To ensure oil cleanliness and longer machine life, change the element at intervals of 20hrs, 50hrs, and at 250hr intervals thereafter.

8

NO STEP

9

BEACON LIGHT
ON OFF

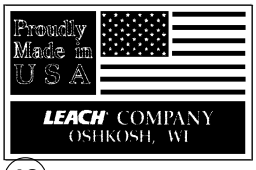
10

CARRIER
CARRIER
CARRIER

13

HYD. PUSH BAR
HYD. PUSH BAR
HYD. PUSH BAR

11



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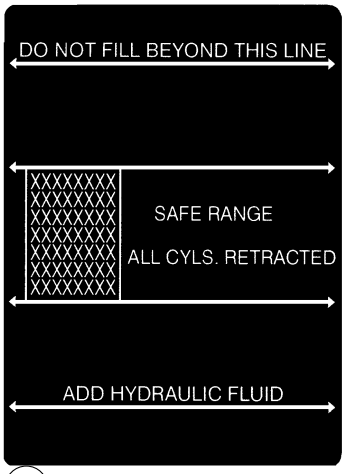


15

EJECTION
EJECTION
EJECTION

16

12,000 LB. CAPACITY

17

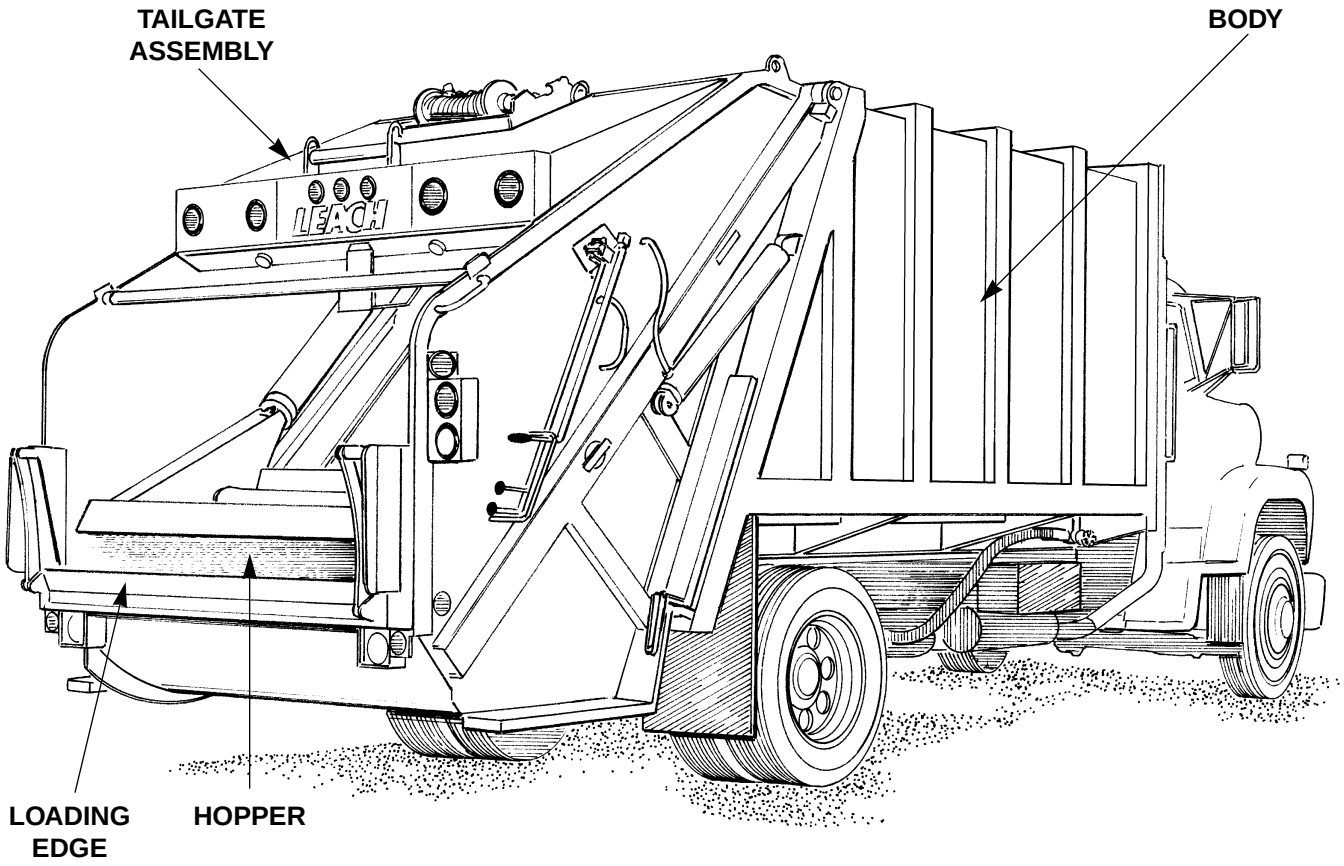
8,000 LB. CAPACITY

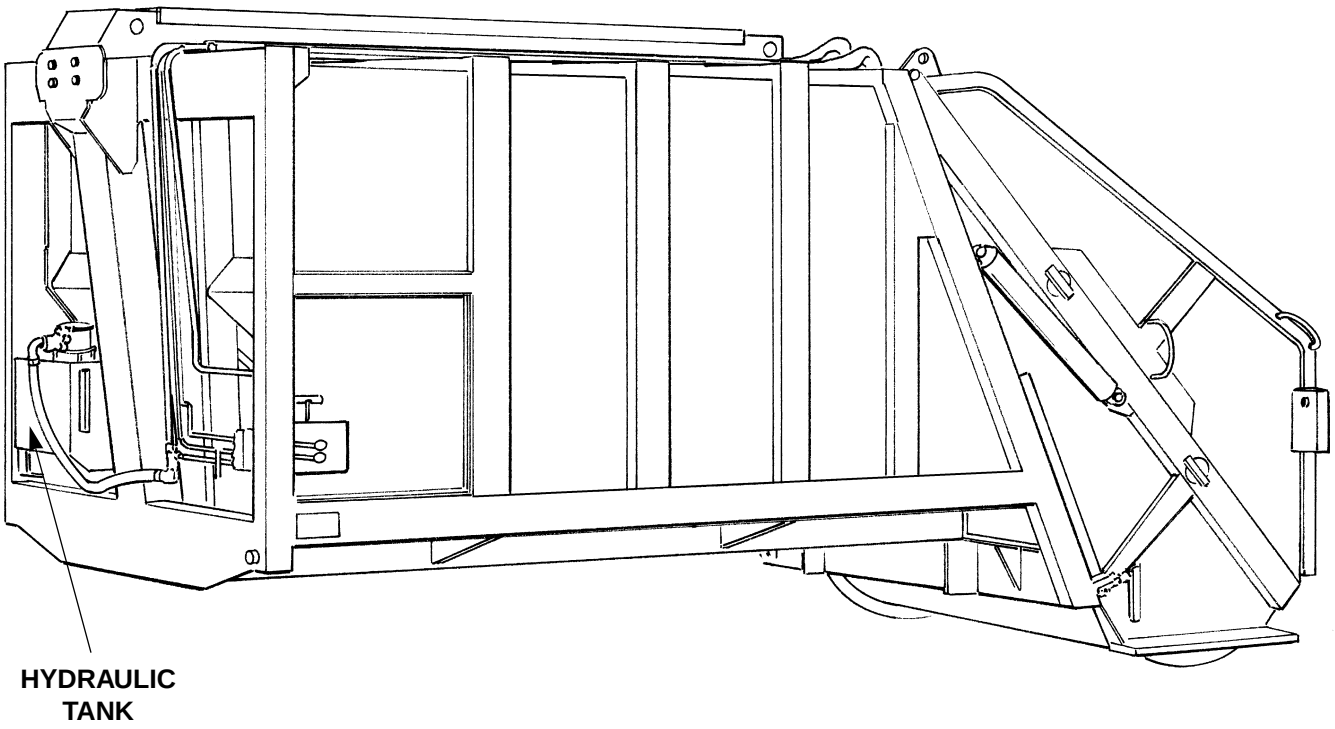
18

PTO

19

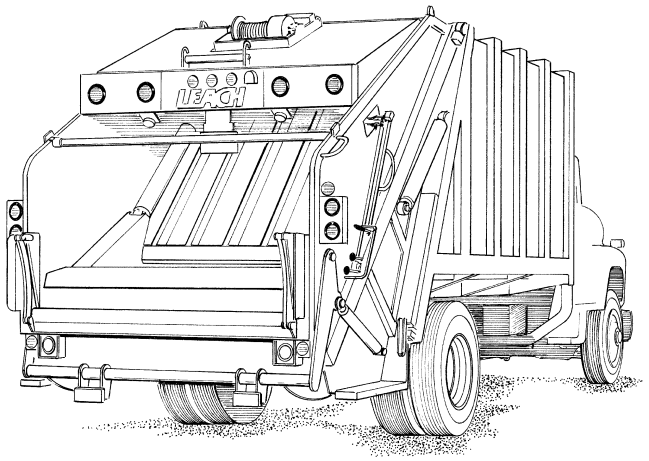
TERMS YOU WILL NEED TO KNOW





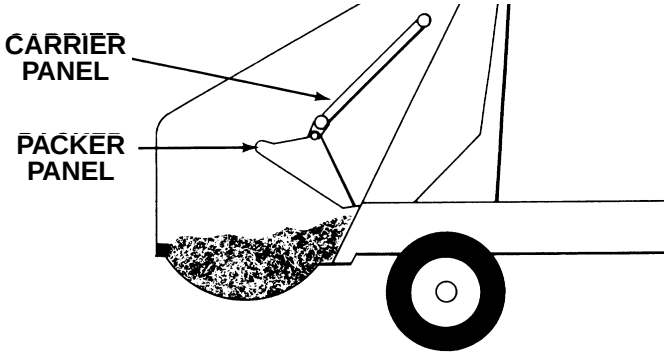
INTRODUCTION

The main purpose of the packer is to safely and efficiently: load, compact, transport and unload refuse. The following describes how the unit performs those tasks in the most basic terms. For a more detailed description of the unit and its components, read the complete Alpha, Beta and Delta SERVICE MANUAL. Before going further, look at the accompanying illustrations and become familiar with the terms you will need to know.



LOADING

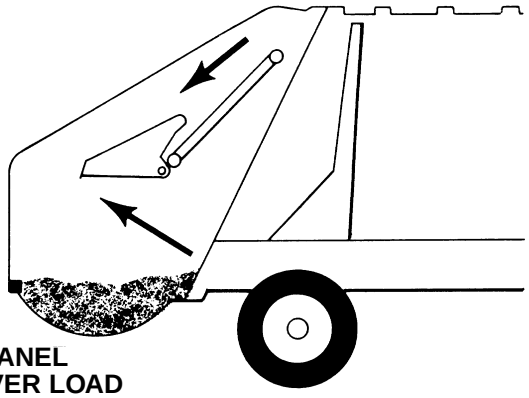
Refuse is first loaded into the hopper of the tailgate assembly. The carrier and packer panels, which sweep up and pack the refuse from the hopper, will be in the “home” position.



“HOME” POSITION

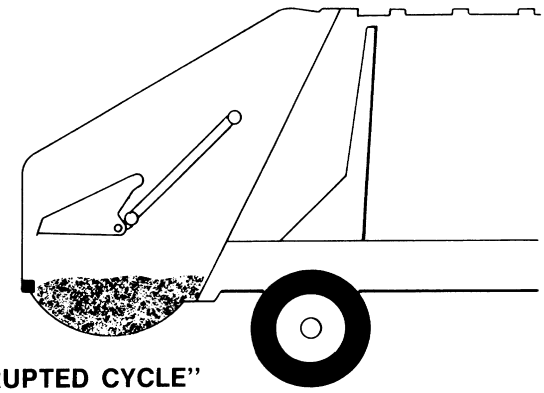
COMPACTION

When the operator starts the packing cycle the packer panel opens and the carrier and packer panels automatically move rearward, over the load.



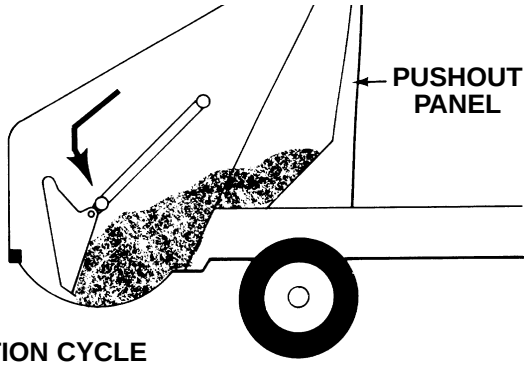
PACKER PANEL MOVES OVER LOAD

Next, the carrier and packer panels automatically stop at the “interrupted cycle” position.



“INTERRUPTED CYCLE”

The operator again activates the packing cycle. The carrier and packer panels move forward and sweep the refuse from the hopper up into the body and pack it against the pushout panel. Having completed a cycle, the carrier and packer panels are back into the “home” position and the hopper is cleared for more refuse.

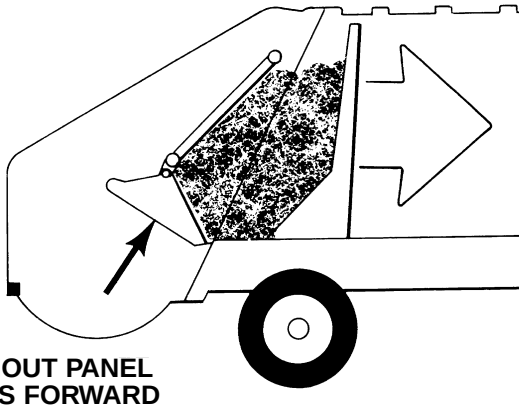


COMPACTION CYCLE

Also, during the compaction cycle, considerable hydraulic pressure is applied to the cylinders which control movement of the carrier and packer panels. This causes the refuse to be compacted tightly allowing for a large carrying capacity.

As loading and compaction continues, the pushout panel gradually moves forward until the body is full.

Once the body is full the unit can be moved to the dumpsite for unloading.

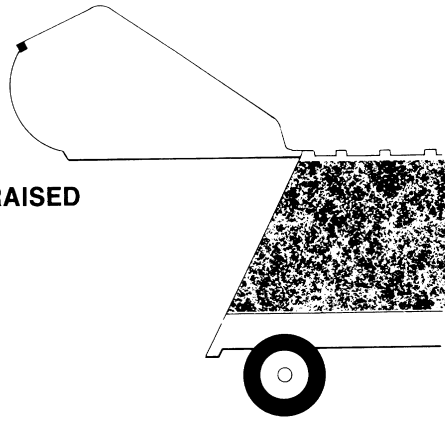


PUSHOUT PANEL
MOVES FORWARD

UNLOADING

At the dumpsite the unit is unloaded in two easy steps:

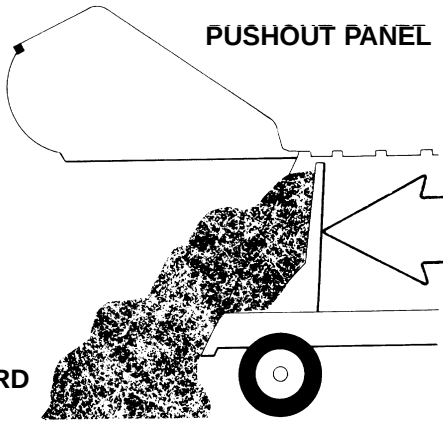
First, the tailgate is raised by the operator.



TAILGATE RAISED

Second, the pushout panel is moved to the rear of the body, pushing out the load.

If the unit is going to travel over one mile empty, completely retract the cylinder. When packing is about to resume extend the cylinder and start packing.

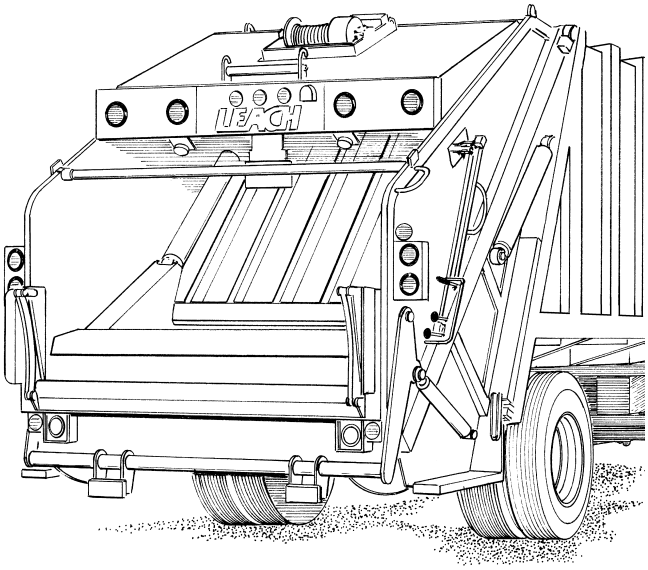


PUSHOUT PANEL
MOVES REARWARD
EJECTING LOAD

INTRODUCTION

CONTAINER ATTACHMENT

The Leach Container Attachment system consists of a loading edge with a latch assembly and a guide ear (ear) on each side of the packer tailgate. The standard container for use with the Leach rear loader must have an ANSI Standard 1¼" – 1¾" diameter trunnion bar which is between 77½" and 78" end to end. This trunnion bar length will center the container between the “ears” and prevent the container from moving sideways. The latch arms must be manually raised and secured by the arm latch. The container arms, when properly latched together with the guide ears, will secure the container to the packer.



⚠WARNING

Only containers that meet the American National Standards Institute (ANSI) regulations should be used in conjunction with Leach Container Handling Systems.

CONTAINER HANDLING SYSTEMS

To lift or dump a container, several systems are available.

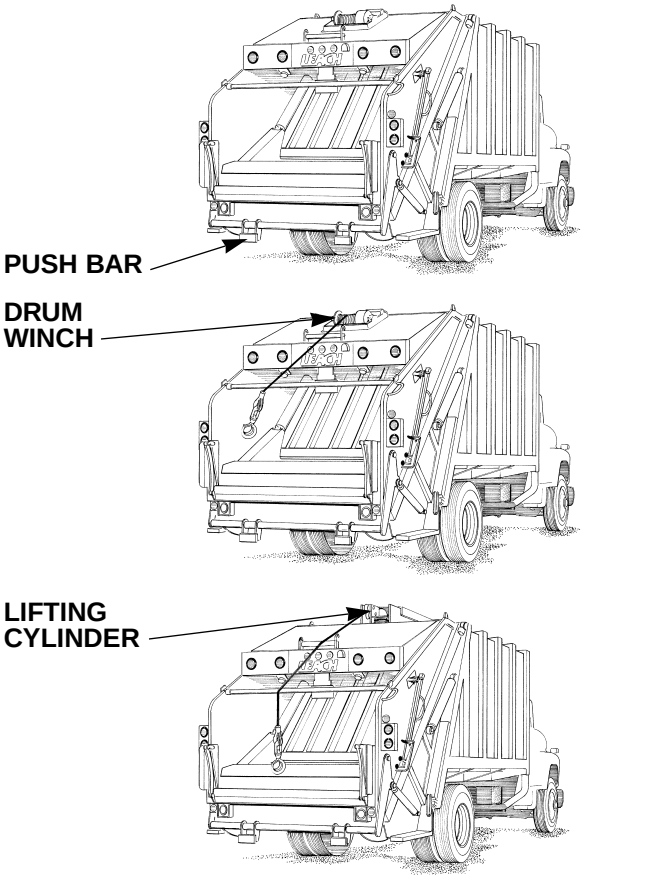
A hydraulically operated container push bar is available to handle containers of 1 to 3 cubic yard capacity.

The handling of containers with capacities of four (4) or more cubic yards requires the use of a drum winch or roof mounted container lifting cylinder.

Drum winches are rated at various pounds of pull. Leach Company offers winches with 8,000, 12,000 and heavy duty 12,000 lb. ratings. The Leach container lift cylinder is rated at 12,000 pounds.

NOTE:

Leach bodies are capable of being equipped with more than one container handling system.



INTRODUCTION

GENERAL

The main purpose of a refuse body is to load, compact, transport and unload refuse. To assist in loading of refuse in containers, various container handling systems are available to be mounted on Leach rear loaders.

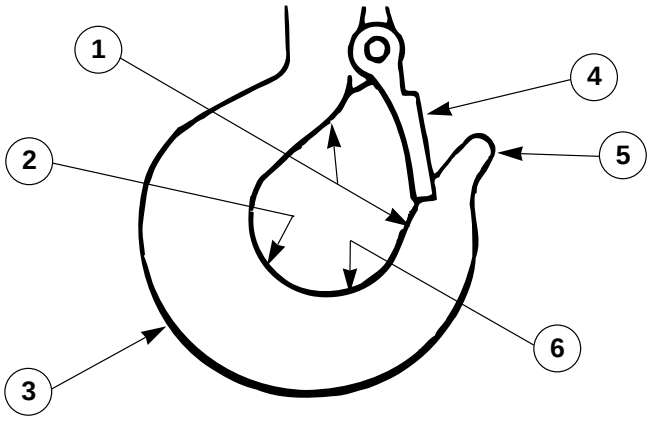
A refuse container may be a mobile residential one (1) cubic yard container with casters or a ten (10) cubic yard stationary commercial container. The equipment required to lift and empty these containers will vary according to the container's type and size.

TERMS YOU NEED TO KNOW

Before going further, become familiar with the container handling terms you will need to know.

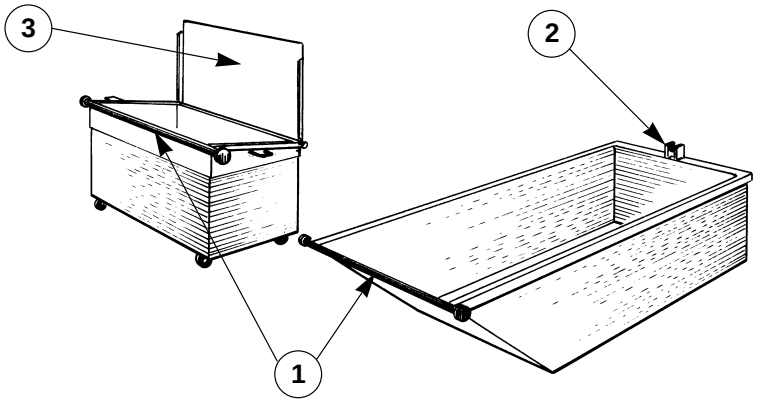
HOOK

1. Throat Opening
2. Back
3. Heel
4. Hook Safety Latch
5. Point
6. Base



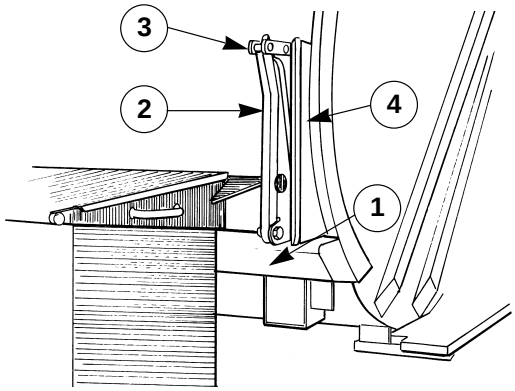
CONTAINER

1. Trunnion bar
2. Hook point
3. Lid



CONTAINER ATTACHMENT

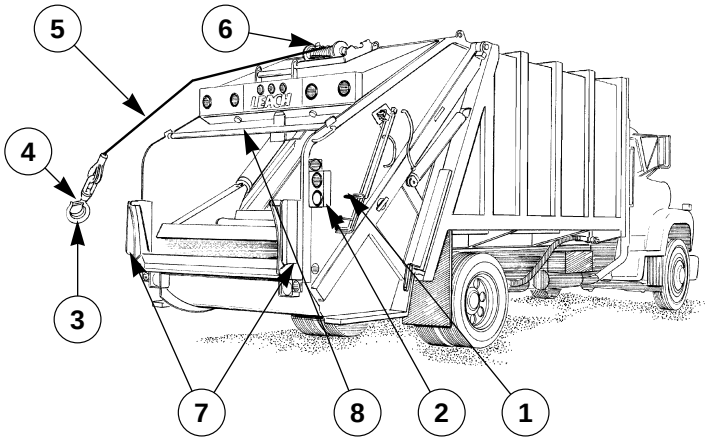
1. Loading sill
2. Arm
3. Latch
4. Guide ear



INTRODUCTION

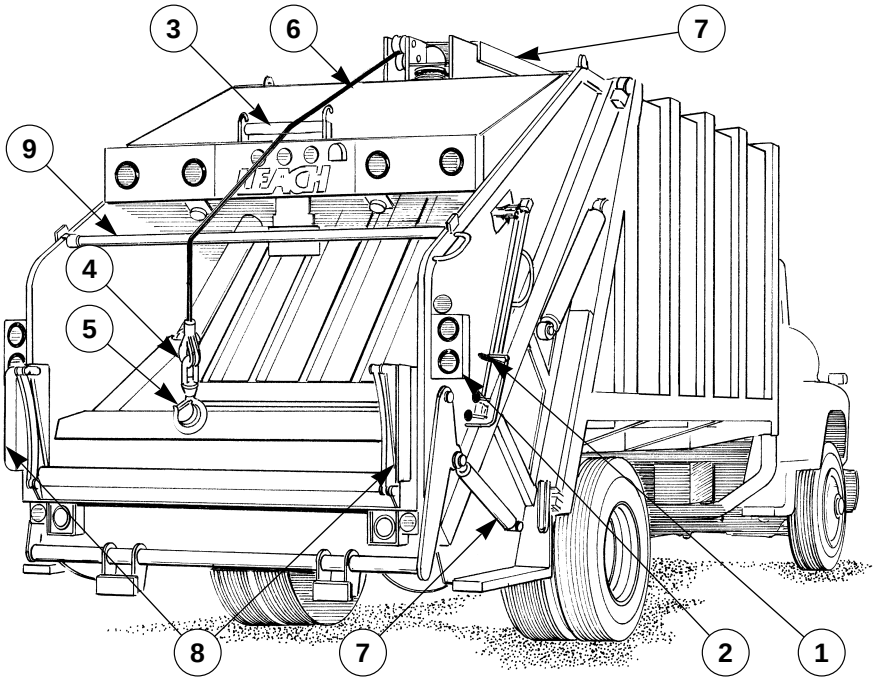
WINCH

1. Control lever
2. Engine speed up button
3. Hook
4. Hook safety latch
5. Cable
6. Winch assembly
7. Container attachment
8. Bump bar/Lid guard



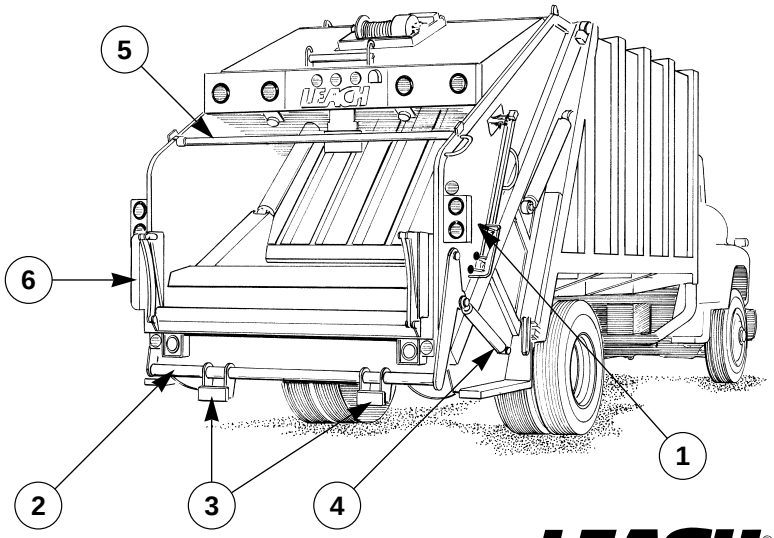
CONTAINER LIFTING CYLINDER (CLC)

1. Control lever
2. Engine speed-up button
3. Roller guide
4. Hook
5. Hook safety latch
6. Cable
7. Lifting cylinder assembly
8. Container attachment
9. Bump bar/Lid guard



CONTAINER PUSH BAR (CPB)

1. Control lever
2. Push bar
3. Lift pad
4. Container dumping cylinder
5. Bump bar
6. Container attachment

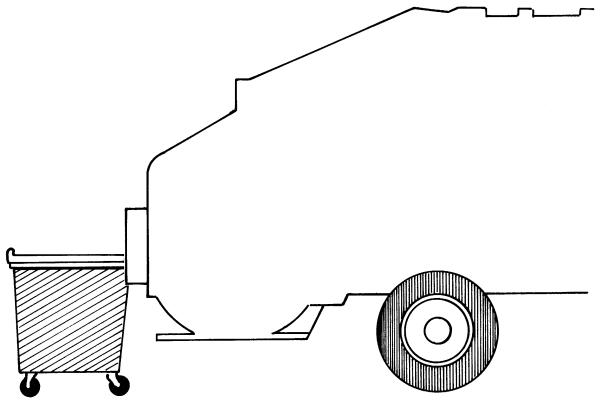


BASIC OPERATION

All Leach container handling systems have three (3) basic steps for operation.

ATTACH

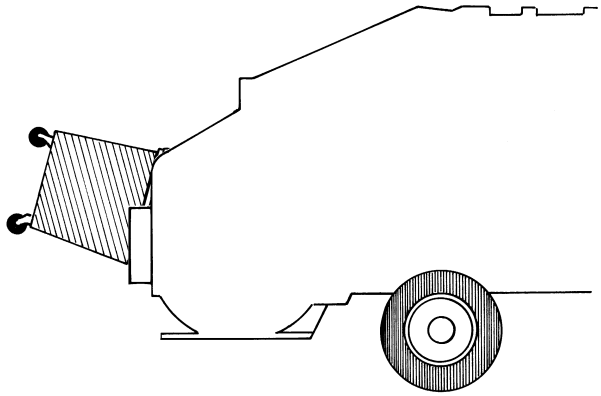
The first step in container handling is to attach the container to the rear loader by securing it with the latch arms of the container attachment.



ATTACH CONTAINER

DUMP

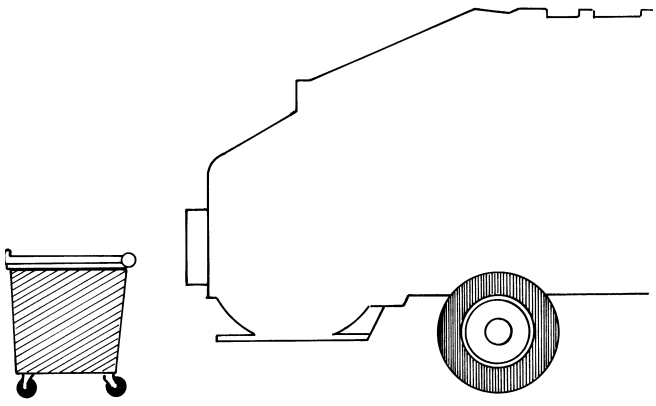
A container handling system is used to raise the container and empty the refuse into the hopper of the rear loader.



DUMP

DISCONNECT

When the container is empty, it is lowered to the ground, the latch arms released and the truck is moved forward.



DISCONNECT

INTRODUCTION

OPERATION

GENERAL

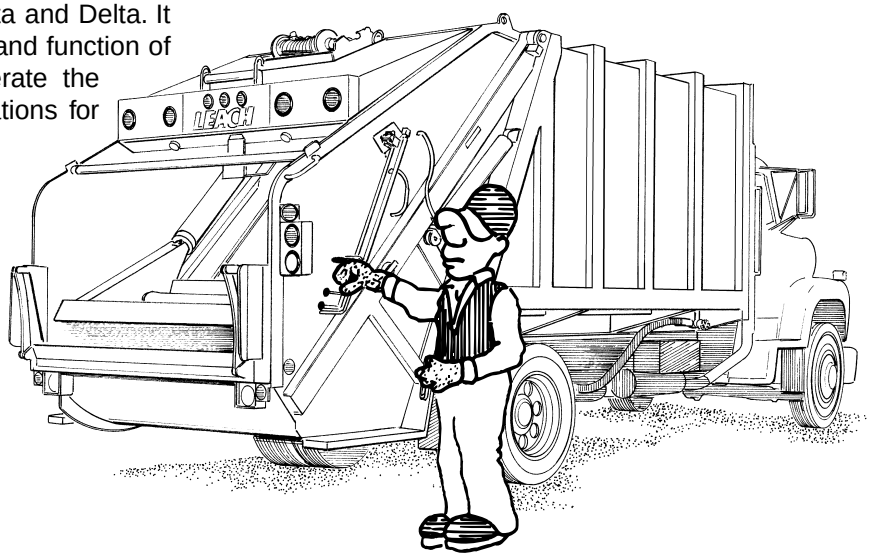
This section will provide all of the instructions necessary to operate the Alpha, Beta and Delta. However, prior to attempting any operation of the unit, make sure you are familiar with all of the safety information contained in Section 1, SAFETY PRECAUTIONS.

DESCRIPTION OF OPERATING CONTROLS

⚠WARNING

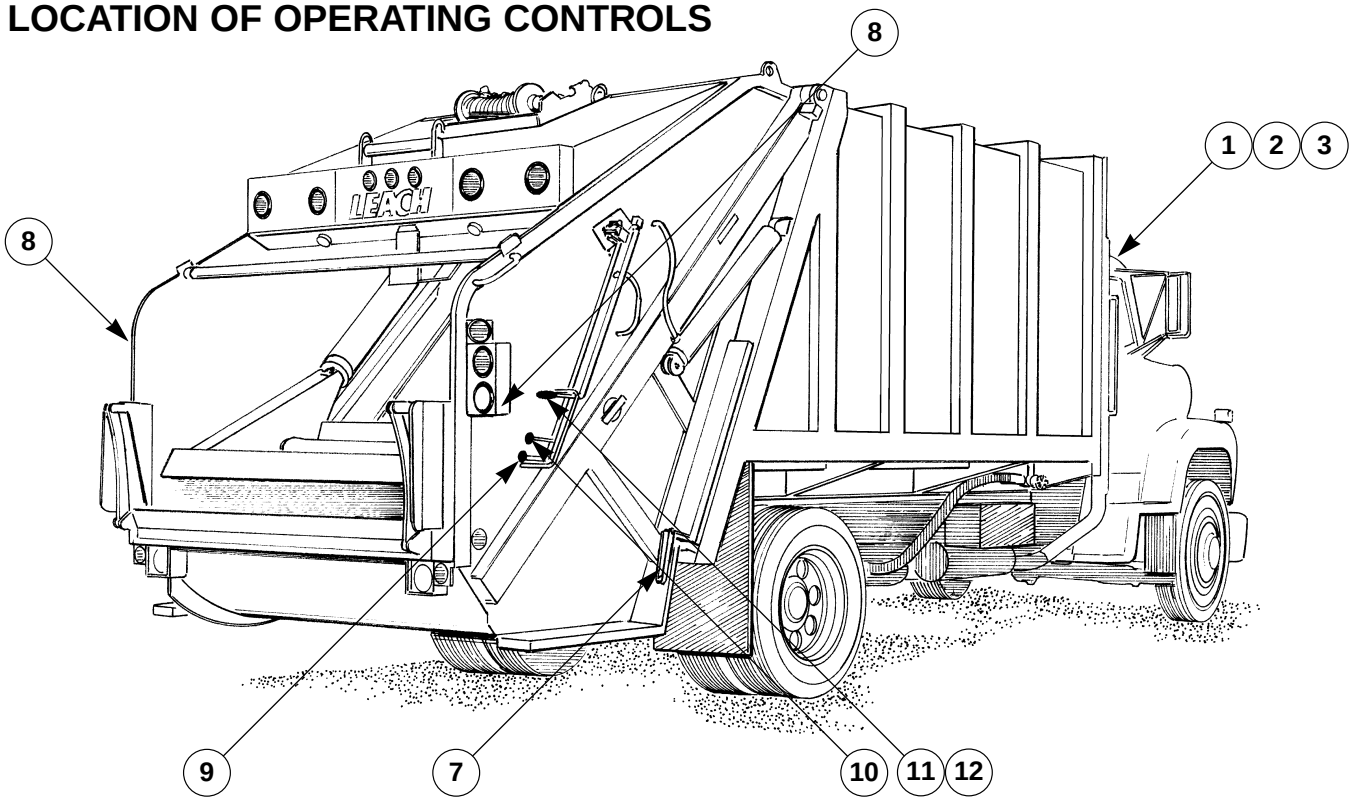
The following information is for descriptive purposes only. It is not to be misconstrued as operating instructions. For operating instructions, refer to OPERATING PROCEDURES later in this section.

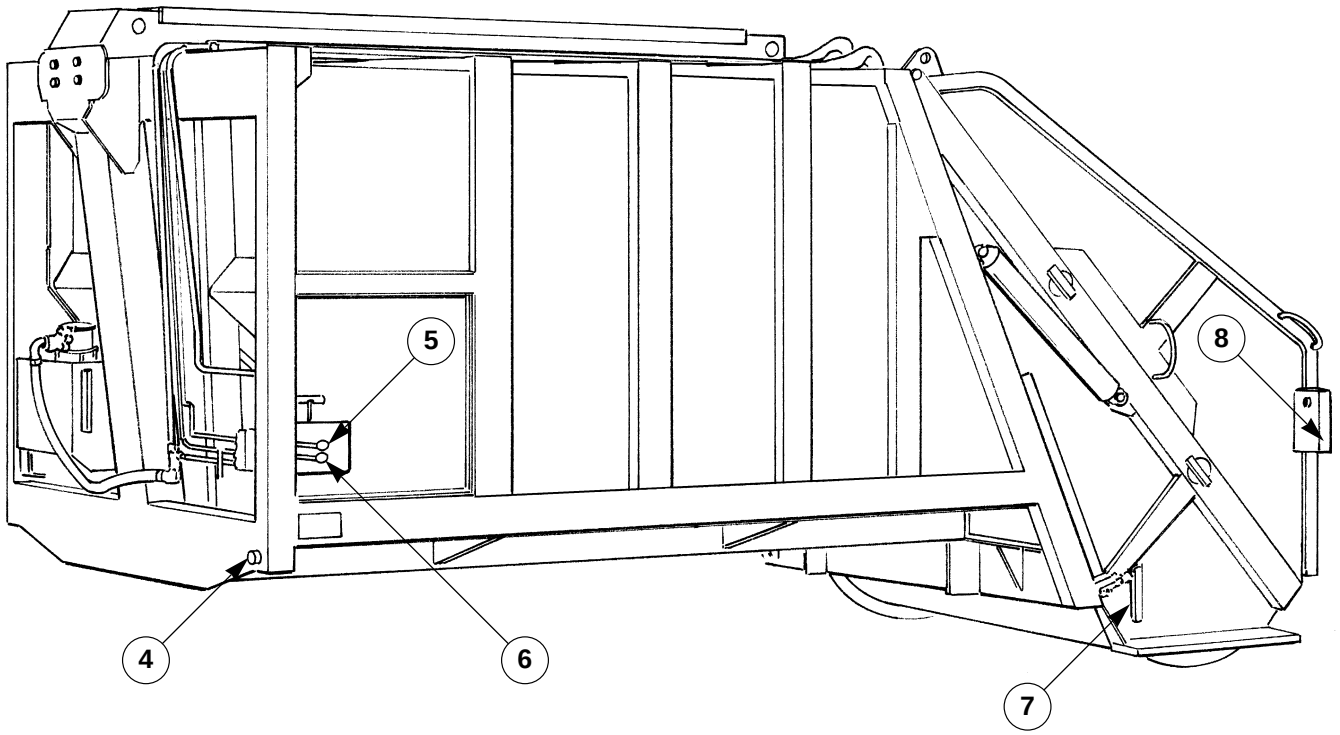
There are only a few controls required for the complete and efficient operation of the Alpha, Beta and Delta. It is important that you know the location and function of each control before attempting to operate the unit. Refer to the accompanying illustrations for their locations.



OPERATION

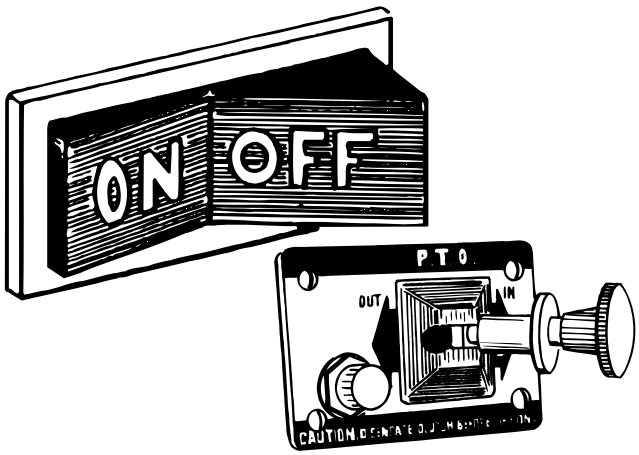
LOCATION OF OPERATING CONTROLS





PUMP/PTO CONTROL (1)

The Pump/PTO (Power Take-Off) is engaged to put the hydraulics in operation. The exact location of the Pump/PTO control will vary depending on the type, truck chassis style and control panel location. The Pump/PTO may be engaged by use of a lever, rocker switch, push-pull cable, toggle lever or positive control button depending on the style. Be sure to read all safety decals associated with the Pump/PTO before attempting operation.



SOLENOID ON-OFF SWITCH (2)

This switch energizes the engine speed-up system. It is located on the cab control panel (exact location dependent on cab make and style).

NOTE:

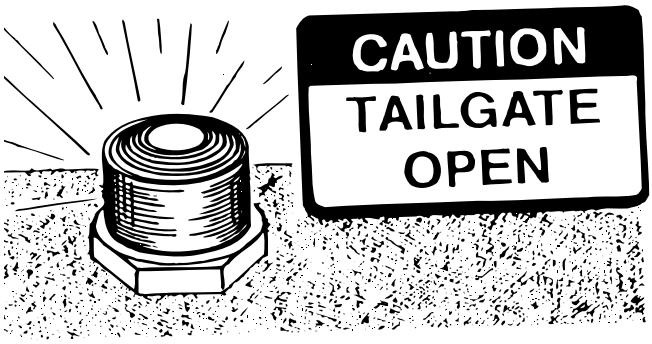
The engine speed-up system consists of the solenoid ON-OFF switch, a relay and solenoid air cylinder. A speed-up push button and speed-up switch connected to the operating control linkage on the Operating Valve. The function of the speed-up system is to speed-up the engine and provide more power to the hydraulic pump during operation of the various hydraulic cylinders.

TAILGATE “OPEN” LIGHT (3)

This warning light, located in the cab, will illuminate if the tailgate is ajar. Having the tailgate ajar will also sound the backup alarm and illuminate the backup lights.

⚠WARNING

Operation of the unit with an illuminated or defective warning system can result in personal injury and /or equipment damage.



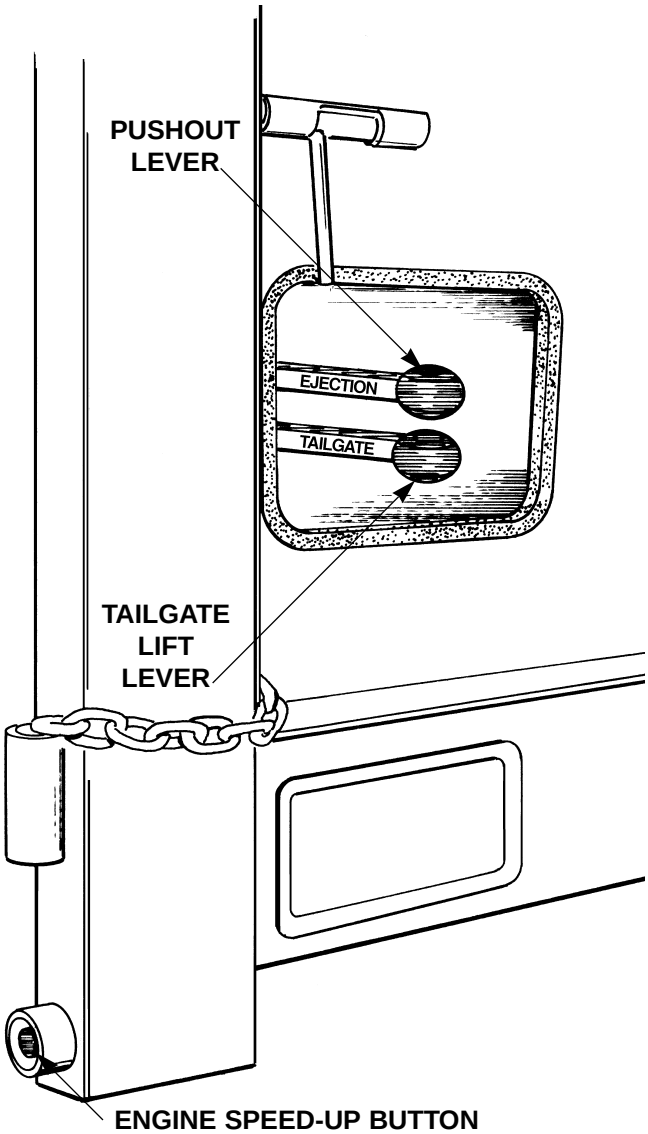
OPERATION

ENGINE SPEED-UP PUSH BUTTON (4)

When depressed, this push button switch will cause the engine to speed-up and supply more power to the hydraulic system. Located on the lower front left side of the body, it is depressed by the operator when operating either the pushout lever or tailgate lift lever.

NOTE

Additional speed-up control buttons may be installed with optional winches and container attachments.



FRONT CONTROL VALVE

The front control valve is located behind the access door on the front left hand side of the body. The control levers for this valve extend out through a cutout in the door. This valve controls the ejection (pushout) panel and the lifting of the tailgate.

PUSHOUT SYSTEM (5)

The pushout panel is attached directly to the pushout cylinder. Moving the control lever rearward (toward the tailgate) will move the pushout panel to the rear. Moving the control lever forward (toward the cab) will move the pushout panel to the front.

TAILGATE LIFT LEVER (6)

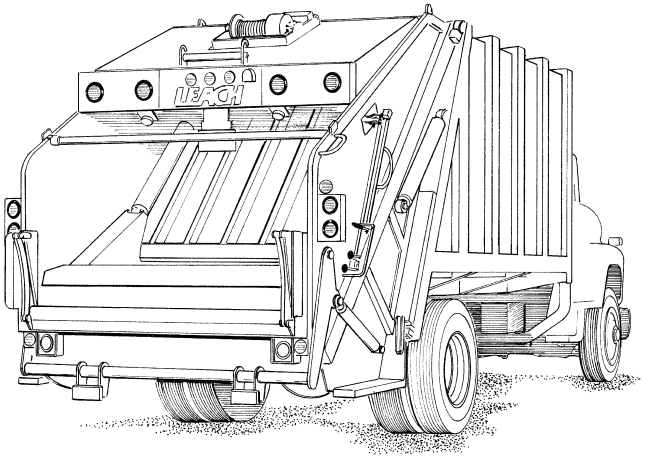
The lower lever controls the tailgate. Moving the lever rearward (toward the tailgate) will raise the tailgate. Moving the lever forward (toward the cab) will lower the tailgate.

TAILGATE CLAMPS (7)

Tailgate clamps are located on each side of the tailgate at the bottom where the tailgate rests against the body. They are used to secure the tailgate to the body during operation. They must be manually loosened and swung away from the body before raising the tailgate.

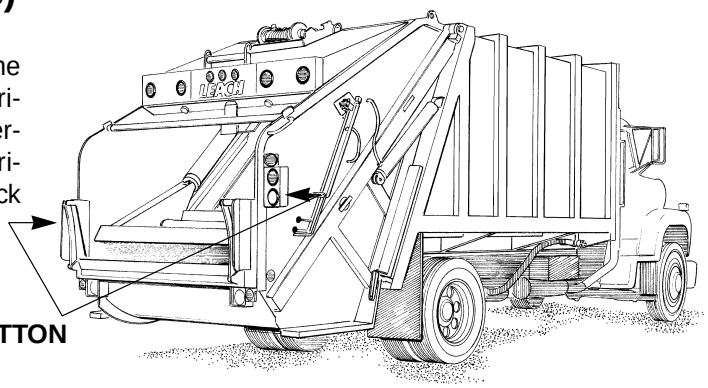
⚠CAUTION

Before attempting to loosen the tailgate clamps, pressure against the tailgate must be relieved by opening the packer panel to the "interrupted cycle" stop position.



DRIVER SIGNAL PUSH BUTTONS (8)

These two push buttons, one located on each side of the tailgate, are connected to a buzzer mounted under the drivers seat or under the dash in the chassis cab. The operator depresses one of these push buttons to signal the driver when the loading operation is completed and the truck is ready to be moved.



PACKER AND CARRIER PANEL OPERATIONAL LEVERS (9)(10)

The packer panel operational control lever is located on the right (curb) side of the tailgate. It is used by the operator to position the packer panel open or closed during the compaction cycle operation.

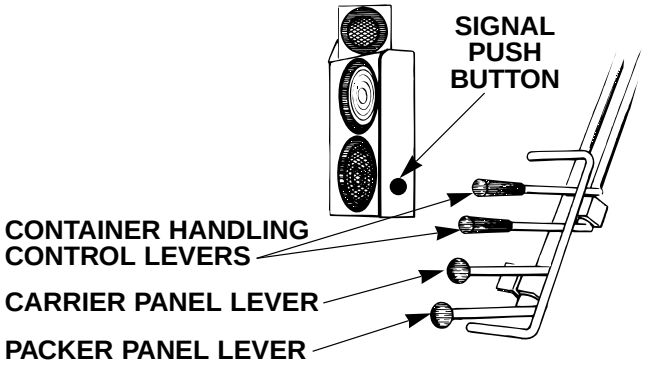
NOTE

The engine speed up system does not engage if only the packer panel lever is shifted. The carrier panel lever must also be shifted to engage the engine speed up system.

The carrier panel operational control lever is located on the right (curb) side of the tailgate. It is used by the operator to position the carrier panel up or down during the compaction cycle.

NOTE

The engine speed up system automatically engages any time the carrier panel lever is shifted.

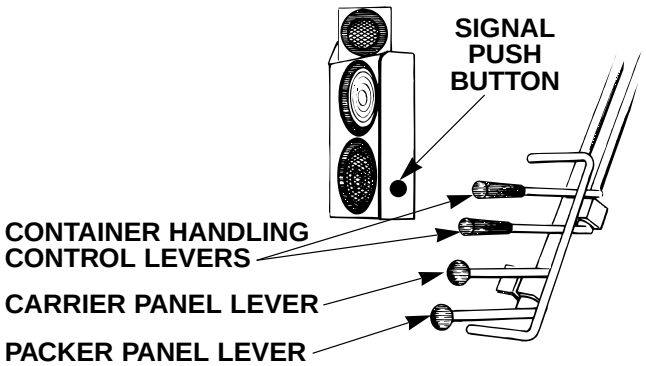


COMPACTION CYCLE OPERATION

Both the packer panel lever and the carrier panel lever are shifted simultaneously inward to open the packer panel and lower the carrier panel to the “interrupted cycle” position. Both levers are shifted outward to sweep the load from the hopper and pack it against the pushout panel. Any time the carrier panel lever is shifted, the engine speed up automatically engages. The packing cycle may be stopped at any point by moving both operating levers to neutral. The packer or carrier panel can be moved independently.

CONTAINER HANDLING CONTROL LEVERS (11) (12)

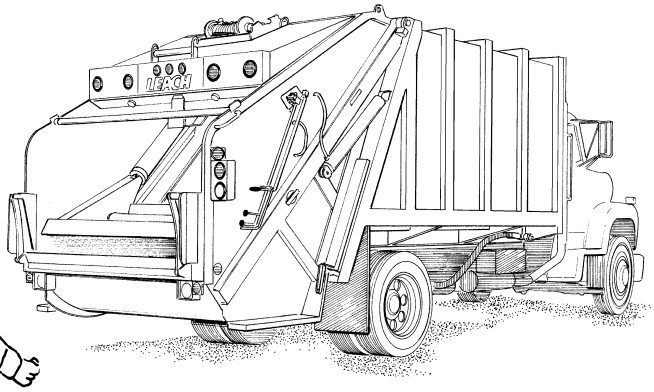
These control levers are provided when container handling attachments (drum winch, reeving cylinder or container push bar) are added to the unit. They are used to raise and lower the container causing the refuse to be deposited in the hopper for compaction. The levers are located on the right (curb) side of the tailgate directly above the packer and carrier panel control levers. A refuse vehicle may have none, one or two control levers, depending on the configuration of the unit.



OPERATION

OPERATING PROCEDURES

This section of the manual provides all the instructions necessary to start and operate the Alpha, Beta and Delta, including specific instructions for loading, packing and unloading the unit.

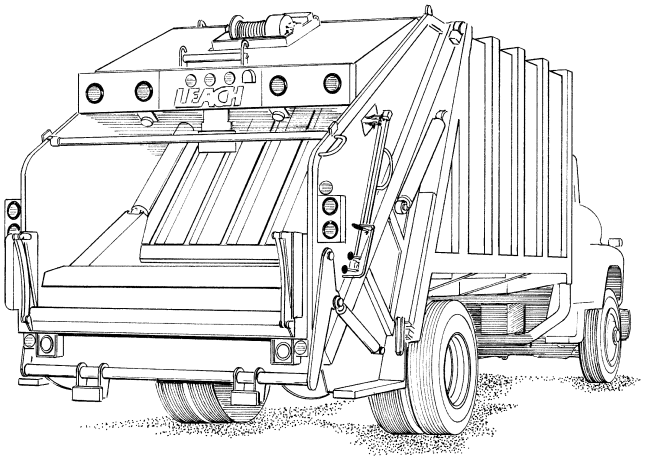


NOTE

It is important that operators and mechanics understand these procedures.

PRE-OPERATING WALK-AROUND INSPECTION

Each day, before starting the unit, perform the following "walk-around" inspection.



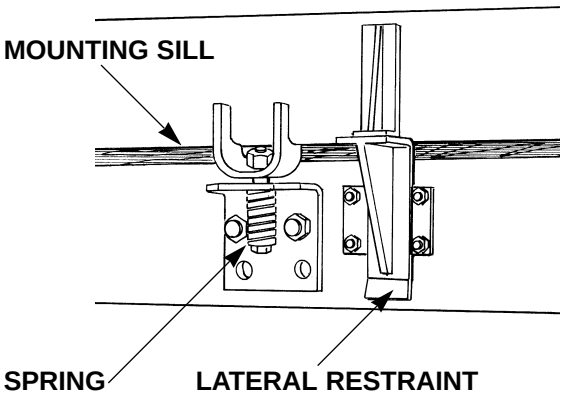
1. Refer to the decal location illustration in Section 1, SAFETY, of this manual and make sure all decals are in place and readable. Replace any decals that are not.

NOTE

A decal kit, free of charge, is available from your local authorized Leach distributor.

2. As you are checking for decals, also look for fluid leaks on and around the unit. Check for fluid leaks at the hydraulic cylinders, valves and fittings.

3. Inspect the mounting sills and attaching hardware. Make sure everything is tight and that there are no broken or excessively worn parts. Check capscrews and fasteners for looseness, visible welds for cracks and control levers for each movement.

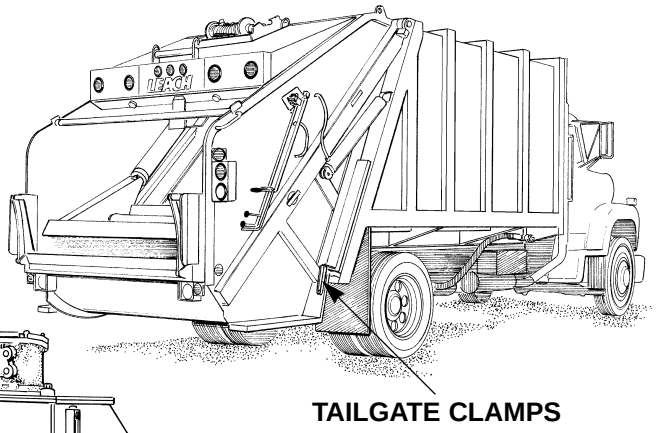


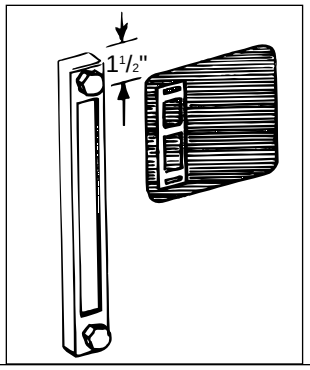
NOTE

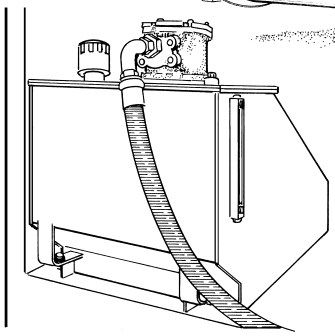
Torque mounting bolt to 700 ft. lbs. and front mounting springs to 3½" plus or minus ⅛".

4. Make sure the tailgate clamps are in the closed position and securely tightened.

5. Check the hydraulic tank gauge to make sure the fluid is in the “safe” range. Add fluid, if necessary. (See Sec. 5, SPECIFICATIONS for the correct type of fluid to use.) The pushout cylinder must be retracted, the tailgate down, the carrier and packer cylinders in the retracted position to check the hydraulic fluid level.



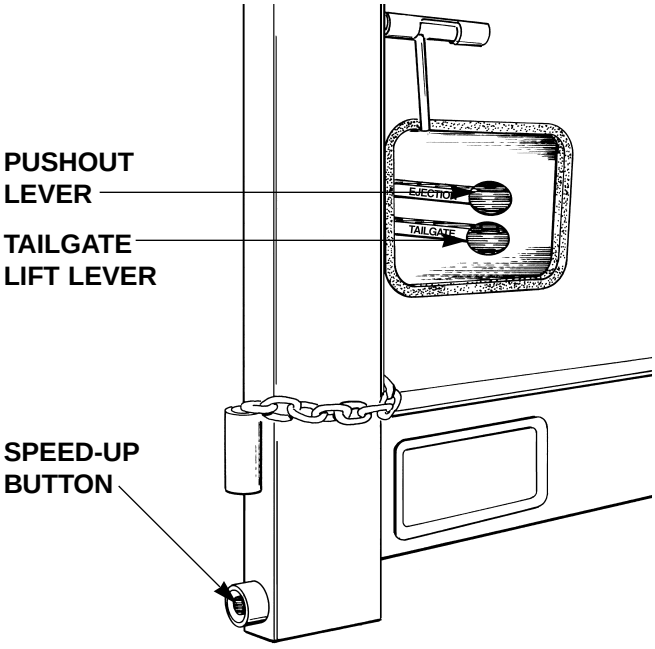




6. Make sure all operating levers are in the neutral position.

Check:

a. Packer panel lever;
b. Carrier panel lever;
c. Pushout lever;
d. Tailgate lift lever;
e. Container handling levers.

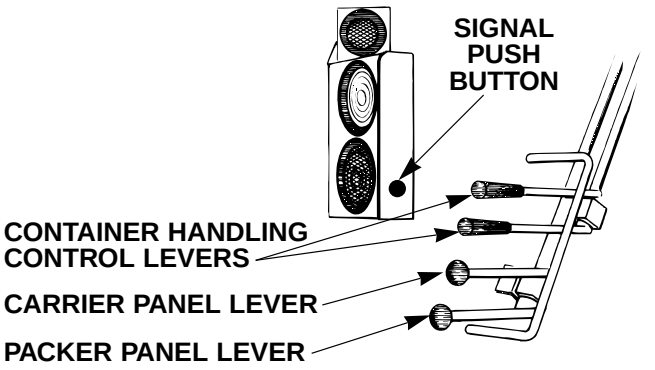


⚠CAUTION

Never operate the unit with any part of the control system or levers removed or serious damage will result.

⚠WARNING

Never under any circumstances enter the body if the truck is running. Open the packer panel and release any pressure in the pushout cylinder before entering the body. Always make sure the truck engine is off and the keys are in your pocket before entering the body.



OPERATION

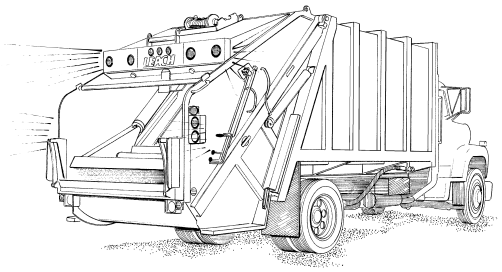
7. Look around the pushout panel area. Clean out any refuse caught in this area that could possibly hamper the pushout panel operation.

⚠WARNING

Never under any circumstances enter the body if the truck is running. Open the packer panel and release any pressure in the pushout cylinder before entering the body. Always make sure the truck engine is off and the keys are in your pocket before entering the body.

8. Start the truck according to the manufacturers instructions and while it is warming up, continue the walk-around inspection.

9. Check all of the operating and running lights. Make sure none are missing and that there are no burned out bulbs.



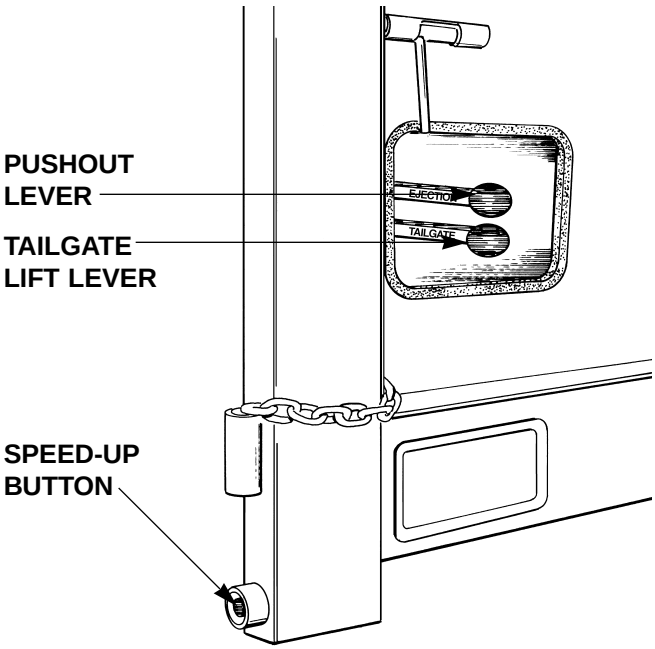
⚠WARNING

The “tailgate open” warning light should be off. Do not operate the unit if the light is illuminated.

⚠ DANGER

Never place hands in or near the packer panel during operation.

10. With the engine running, the speed-up solenoid switch ON, the PTO engaged and the transmission in neutral and the brakes applied, depress the speed-up push-button on the forward left (street) side of the body. You should hear the engine speed-up.



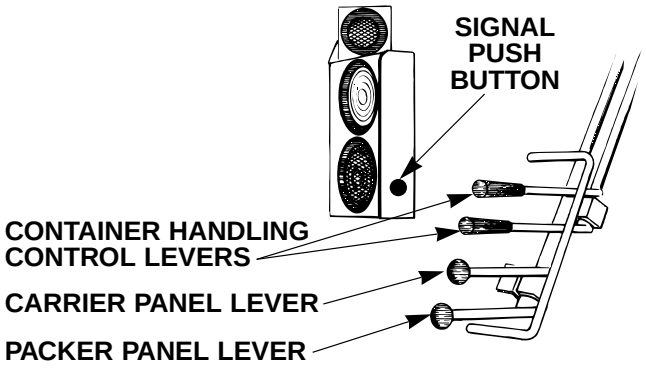
⚠CAUTION

Never hold the packer or the carrier panel lever in position by hand. Always engage and let go immediately. The only exception is at the end of a load.

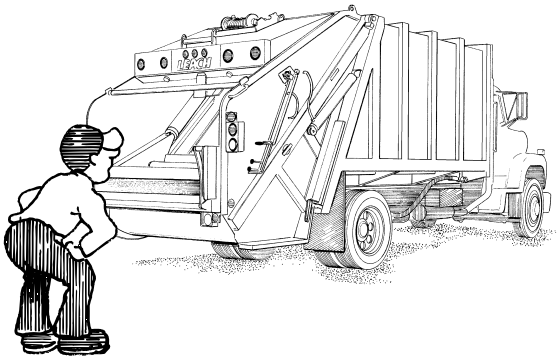
11. Move both the packer panel lever and carrier panel lever inward and let go. Check for the following:

    a. Engaging the carrier panel lever will activate an engine speed up switch, you should hear the engine speed up.

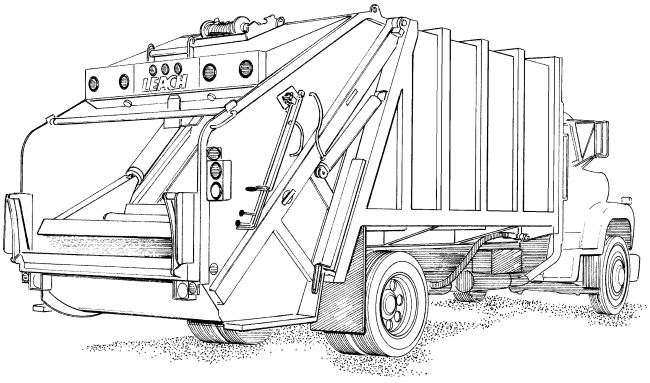
    b. Observe the carrier and packer panel movement, it should be smooth. The panels should stop automatically at the “interrupted cycle” position.



12. Move both the packer panel lever and carrier panel lever outward and let go. Observe the carrier and packer panel movement, it should be smooth. The panels should stop automatically at the “home” position.

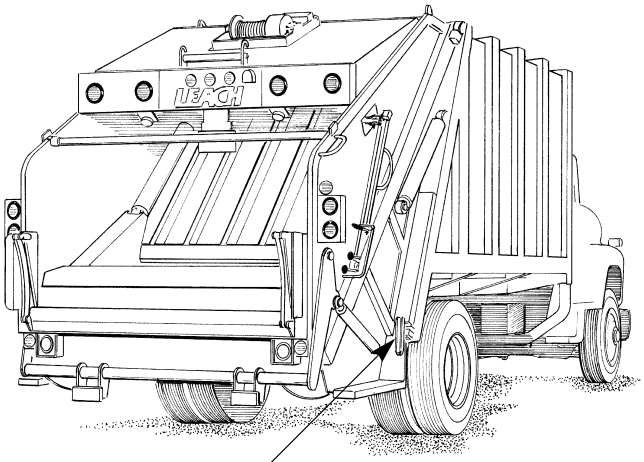


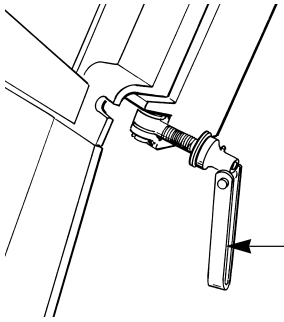
13. Depress the two driver signal push buttons located on both sides of the tailgate to make sure that the audible alarm located in the cab is working.



14. Back the unit up a few feet to ensure that the back-up alarm is working properly.

15. Loosen the tailgate clamps and swing out. Raise the tailgate approximately 6" and check to see if the tailgate ajar light on the dash is on and if the backup alarm is audible. (Do not have the unit in reverse).



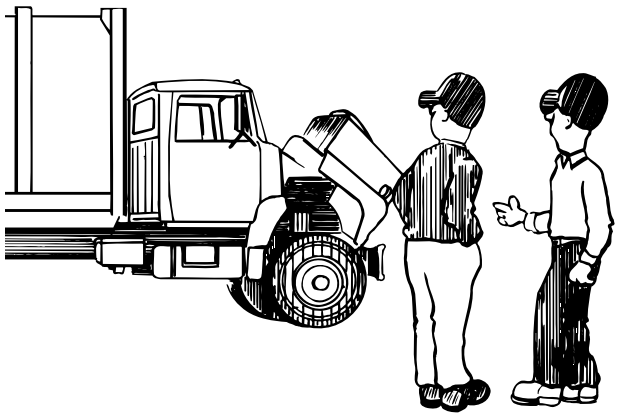


OPERATION

⚠WARNING

Do not operate a unit that is in need of service or repair.

16. Report any problems found during the pre-operation walk-around inspection to the maintenance supervisor for service or repair, place a tag on the steering wheel, using a non-reusable fastener, stating the unit is inoperative and remove the keys.

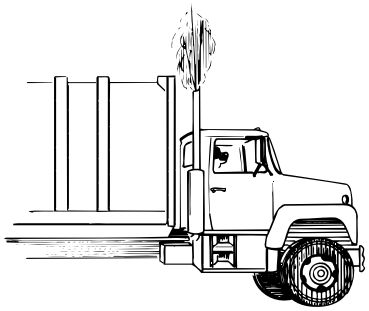


WALK-AROUND INSPECTION CHECKLIST

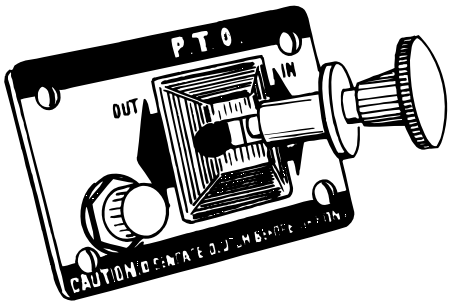
1. Decals in place and readable.
2. Look for any fluid leaks.
3. Mounting hardware tight and in place.
4. Tailgate clamps closed and tightened.
5. Hydraulic fluid reservoir at correct level.
6. All operating levers in neutral positions.
7. Pushout panel area clear of debris.
8. Engine warmed up according to manufacturer's instructions.
9. All operating and running lights functioning.
10. Engine speed-up buttons operational.
11. Packing cycle operates properly.
12. Driver signal alarm can be heard.
13. Back-up alarm and tailgate ajar light are operable.
14. Report any problems to proper personnel.

START UP
(OPERATING INSTRUCTIONS)

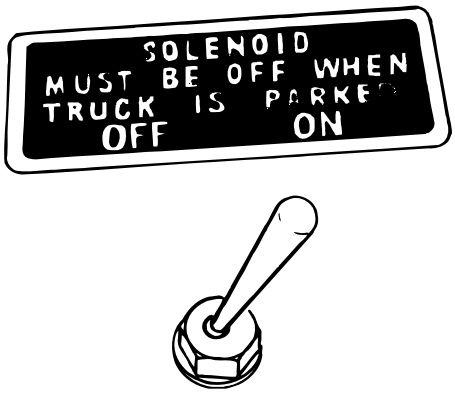
1. Inspect and start the truck as described in pre-operational walk-around inspection.



2. Engage the Pump/PTO control (to start the hydraulic pump).



3. Place the solenoid switch in the ON position.

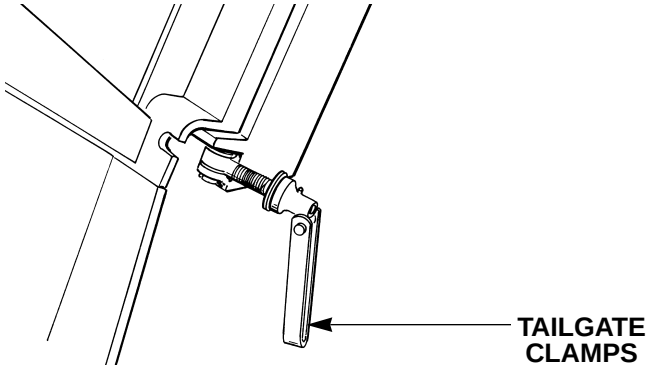


OPERATION

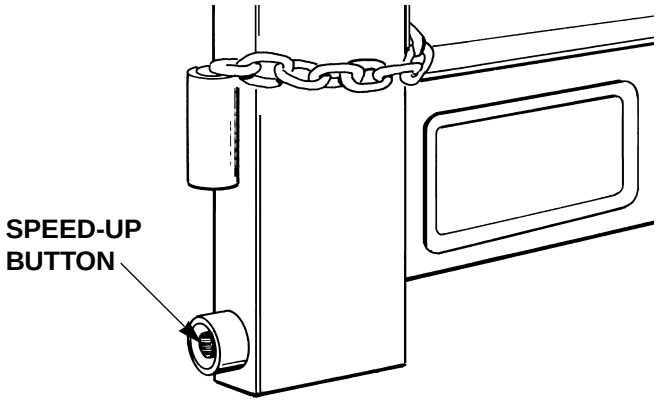
POSITIONING PUSHOUT PANEL

To load the unit, the pushout panel must be positioned toward the rear of the body.

1. Check the tailgate clamps to make sure both are securely tightened.

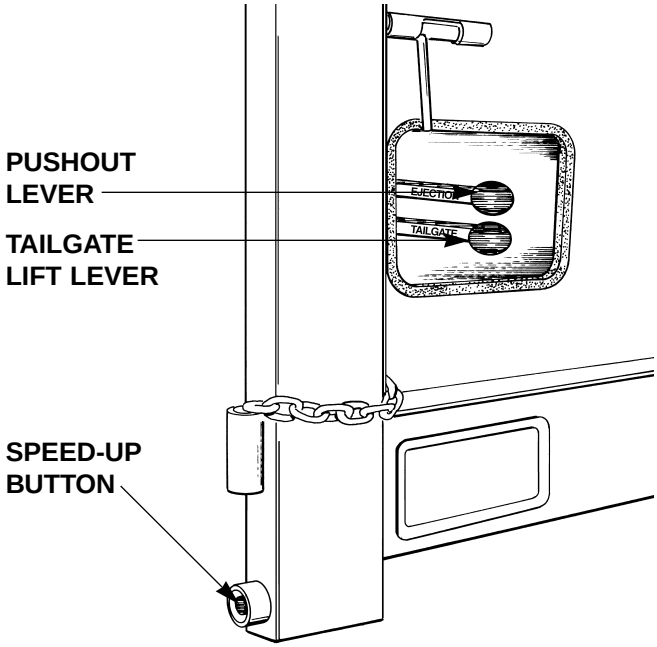


2. Depress and hold the speed-up push button.



3. Push the pushout lever rearward until the pushout cylinder is fully extended.

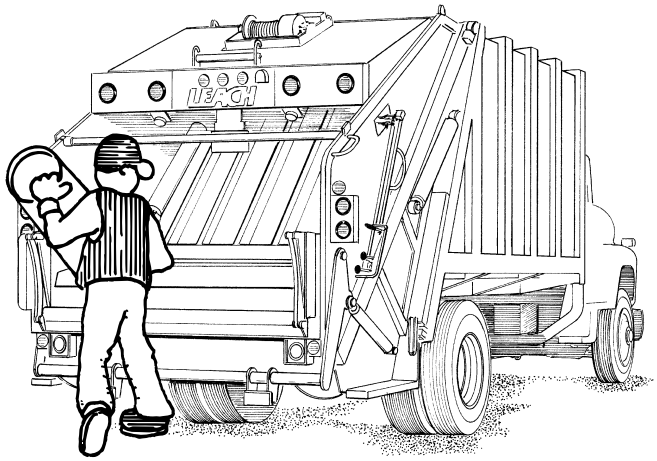
4. Release the speed-up button.



LOADING THE HOPPER

There are only a few but important points to remember during loading of refuse.

1. Load the hopper evenly on both sides.
2. Load heavy objects in the center of the hopper.
3. Do not load refuse higher than the loading edge.



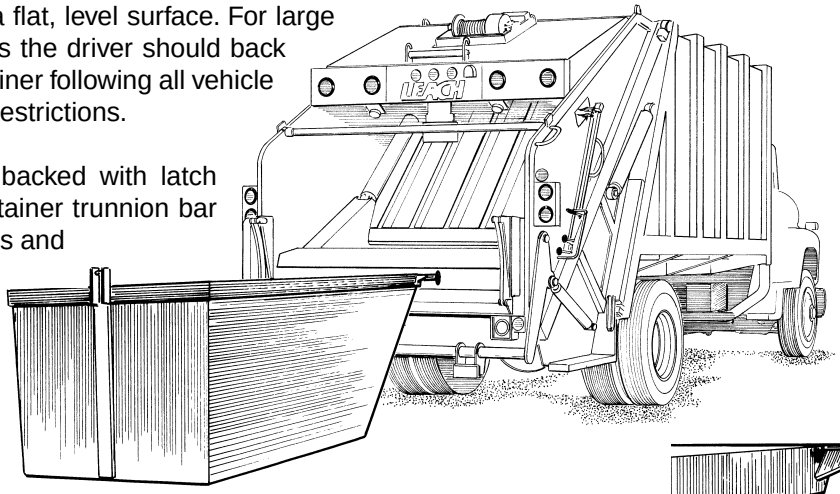
⚠WARNING

Always follow proper loading procedures.

ATTACHING A CONTAINER TO THE PACKER

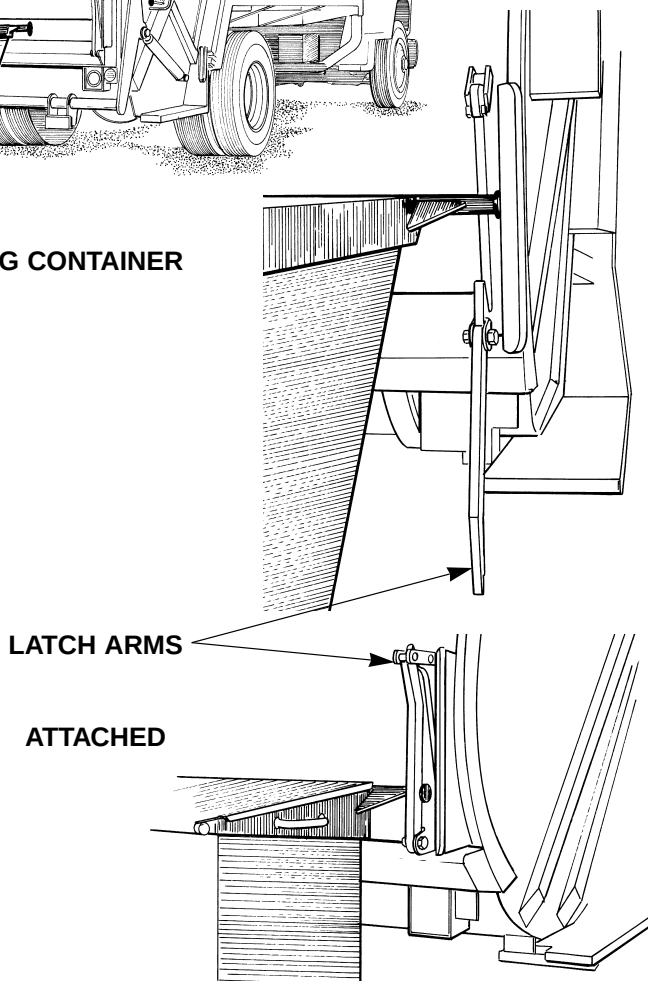
Place the container on a flat, level surface. For large non-moveable containers the driver should back the unit toward the container following all vehicle and refuse body safety restrictions.

The vehicle should be backed with latch arms open until the container trunnion bar is between the guide ears and within the latch assembly. Center the container on the attachment.



ATTACHING CONTAINER

After setting the vehicle parking brake, the right and left container latch arms must be engaged.



⚠WARNING

Lifting a container without both latch arms secured can allow the container to swing away from the unit and cause severe injury or death.

NOTE:

If the container is equipped with wheels, it should be rolled into position only after the vehicle parking brake has been set.

Even small containers must use the latch arms to secure them to the packer.

OPERATION

USING A WINCH OR CONTAINER LIFT CYLINDER

Once the container is secured within the latch assembly, the lifting cable should be attached. Place the load in the base of the hook with the safety latch closing the throat opening.

It is important that hooks are used in a proper manner. Proper use of a lifting hook not only includes placing the load in the base of the hook, but also includes ensuring that the hook is lifting on the proper area of the attachment point.

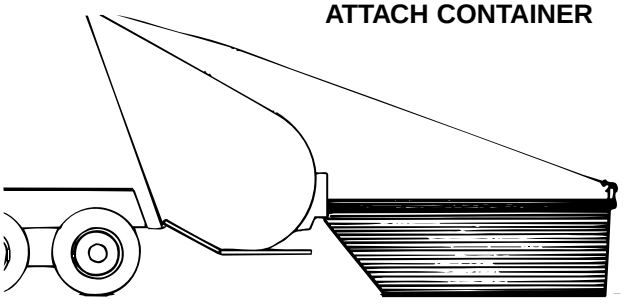
The hook must completely encircle the attachment point. Equally as important, at the time load is applied to the base of the hook, the positioning must be correct to prevent the hook from dislodging. When using an eye type attachment point the base of the hook must be positioned to lift on the inside of the eye. The diagrams show both correct and incorrect positioning of the hook.

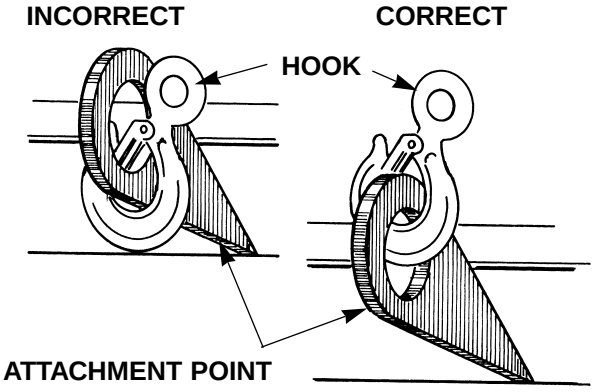
For the safety of yourself as well as others always ensure that a hook is positioned properly as slack is removed from the chain/cable before lifting.

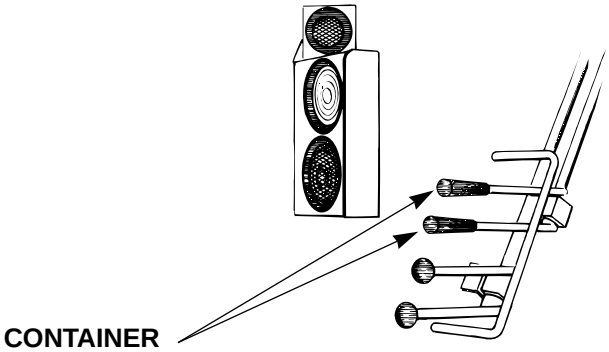
Slack should be removed from the cable, without the use of the engine speed-up button, by moving the winch control lever in the direction shown on the instruction decal to raise the container. When the cable is tight, the speed-up button should be depressed and held to provide sufficient hydraulic power to lift the container.

The container should be raised until the contents begin to slide into the hopper of the packer or until it is resting against the container bump bar.

Do not overfill the hopper. After assuring that all persons are standing clear lower the container to check the load condition of the container and the hopper. Lower the container enough to see between the container and the tailgate while standing on the ground without placing yourself between them.







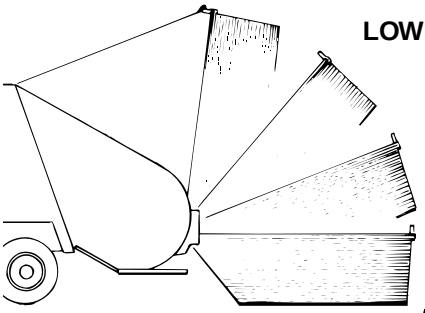
NOTE

On units with a roof mounted container lifting cylinder, the speed of the device is limited during both the up and down movement. This speed reduction is for safety considerations.

When the hopper is full, lower the container to the ground, assure all persons are standing clear and then engage the packer mechanism. See Sec. 3 Operation - Packing Load.

After the packer panel has passed the loading sill, the container may be raised to again fill the hopper.

Repeat this process until the container is empty.

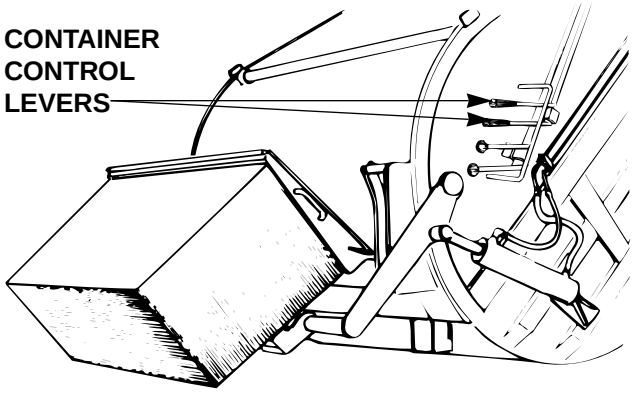


USING A CONTAINER PUSH BAR (CPB)

Once the container is secured within the latch assembly the container is ready to be dumped. After assuring that all persons are standing clear, the operator moves the CPB control lever in the direction shown on the instruction decal to raise the container. When raising a container with the push bar, it is normal for the container to first lift upward within the container latch assembly, then tip toward the hopper and finally lower or drop to the bottom of the latch slots.

Do not overfill the hopper. After assuring that all persons are standing clear lower the container to check the load condition of the container and the hopper. Lower the container enough to see between the container and the tailgate while standing on the ground without placing yourself between them.

DUMPING WITH CPB



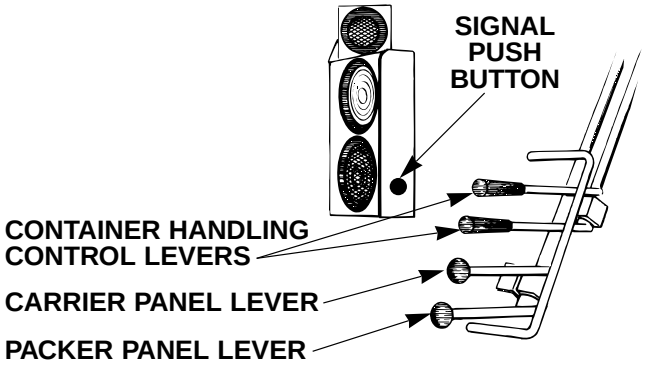
Releasing the CPB control handle when the container begins to tip will allow the container trunnion bar to lower within the latch slots with ease.

PACKING THE LOAD

NOTE:

The compaction cycle can be stopped at any time by moving both the packer panel lever and the carrier panel lever to the center (neutral).

1. Cycle the packer panel and the carrier panel by moving both the packer panel lever and the carrier panel lever inward, toward the tailgate, then let go. The packer panel will open and the packer panel lever will automatically shift to neutral. The carrier panel will then move down to above the loading edge, stop in the "interrupted cycle" position and the carrier panel lever will automatically shift to neutral.

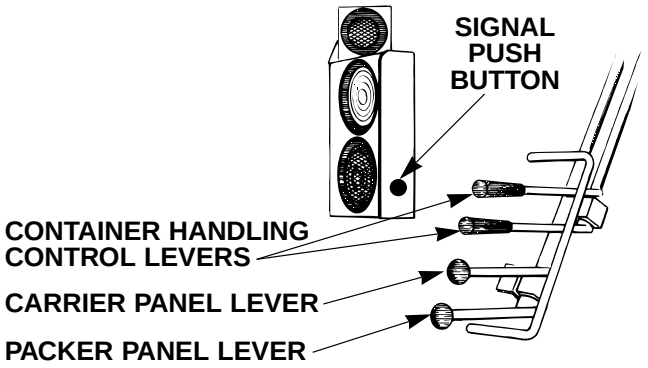


2. To finish the cycle, move both the packer panel lever and the carrier panel lever outward, away from the tailgate, then let go. The packer panel will sweep the hopper and the packer panel lever will automatically shift to neutral. The carrier panel will then move up into the body and stop in the home position and the carrier panel lever will automatically shift to neutral.

⚠WARNING

Stand clear of the hopper area during the packing cycle!

3. Repeat steps 1 and 2 each time the hopper is filled to, but not above, the loading edge.

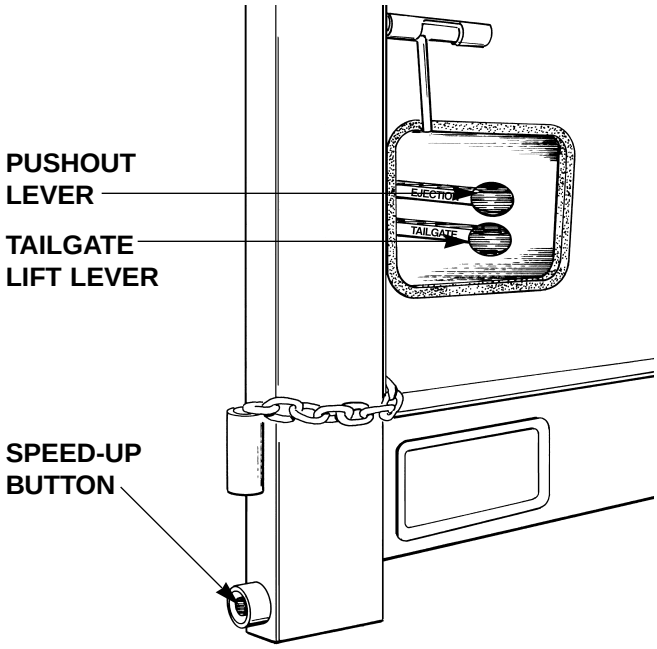


OPERATION

PUSHOUT PANEL OPERATION DURING PACKING

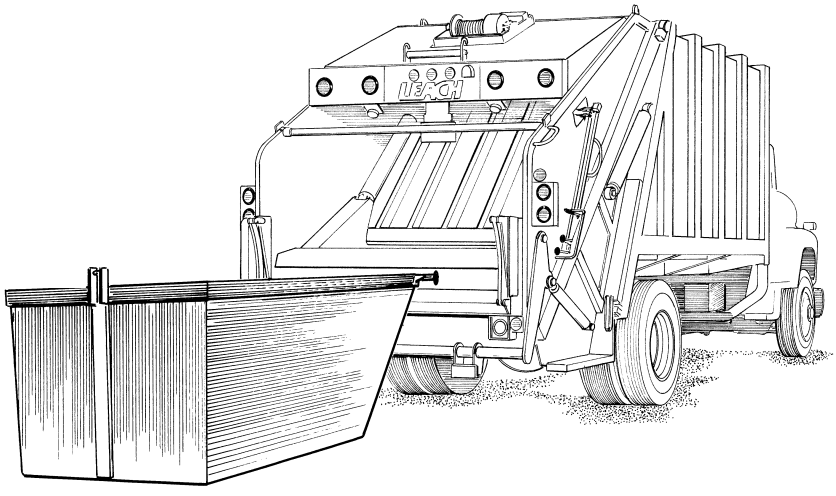
PUSHOUT CYLINDER

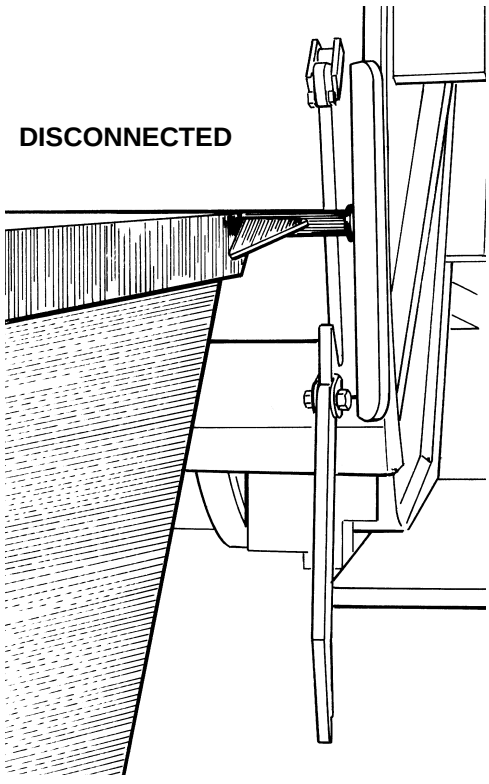
The pushout panel is normally moved toward the front of the body automatically. When the resistance circuit is adjusted to produce maximum load density, it may become necessary to manually retract the pushout cylinder in order to allow the compacted refuse to move forward in the body. When the pushout panel has reached the front of the body, neither the packer panel operating lever nor the carrier panel lever should be overridden except to clear the final hopper load.



DISCONNECTING THE CONTAINER

Once the container is empty, it should be lowered to the ground, the latch arms released and the cable disconnected.





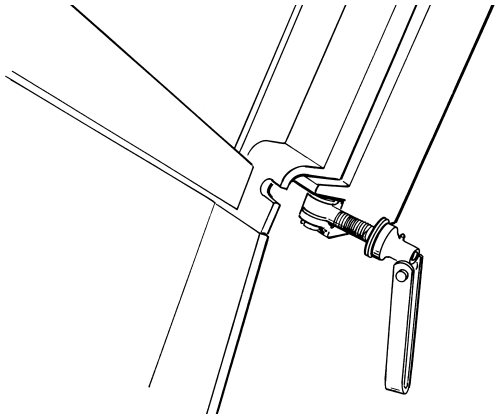
UNLOADING AT DUMPSITE

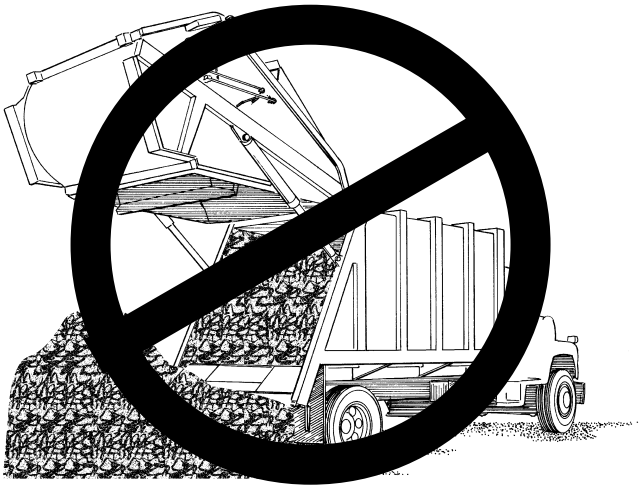
⚠CAUTION

Do not unload uphill or against a pile of refuse.

1. Apply the brakes, engage the PTO and ensure the transmission is in neutral. Relieve the pressure on the tailgate by moving the packer panel to the “interrupted cycle position”.

2. Loosen both tailgate clamps and swing them out and forward as far as they will go.



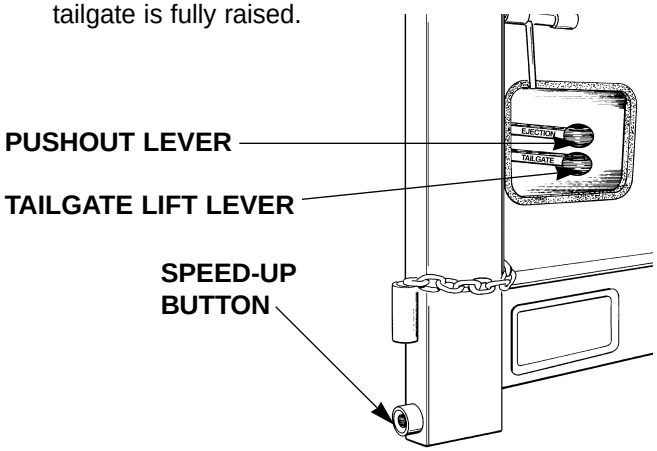


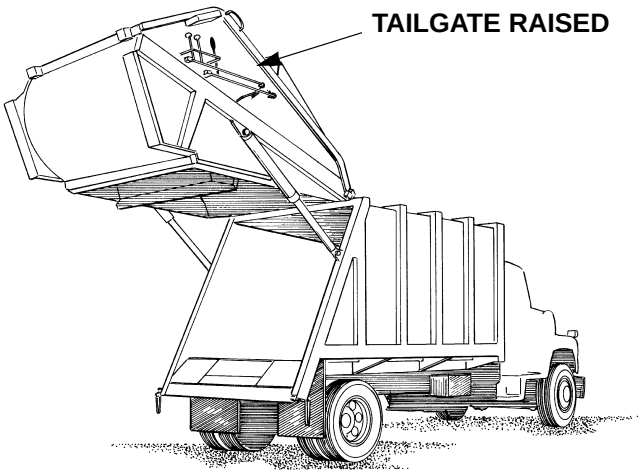
LIFTING THE TAILGATE

⚠ DANGER

Stand clear when the tailgate is raised! If you need to clean debris from the edges, use a long pole while standing to the side.

1. Depress and hold engine speed-up button.
2. Push the tailgate lift lever rearward and hold until the tailgate is fully raised.





⚠WARNING

The “tailgate open” light and backup lights should illuminate. The backup alarm should also sound.

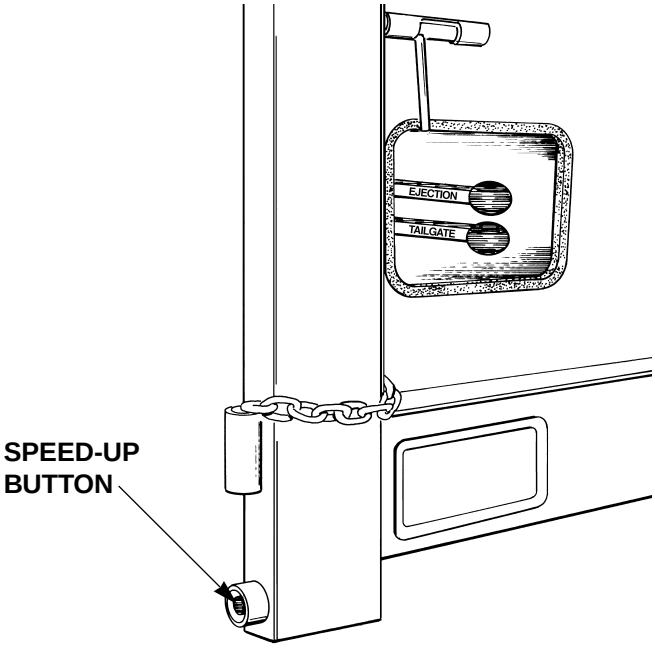
OPERATION

EJECTING THE LOAD

1. Depress and hold engine speed-up button, push the pushout lever rearward and hold until the pushout panel stops. This will eject the entire load.

2. Slowly pull the unit ahead to clear the refuse.

3. Clean debris from the edges with a long pole while standing clear off to one side.

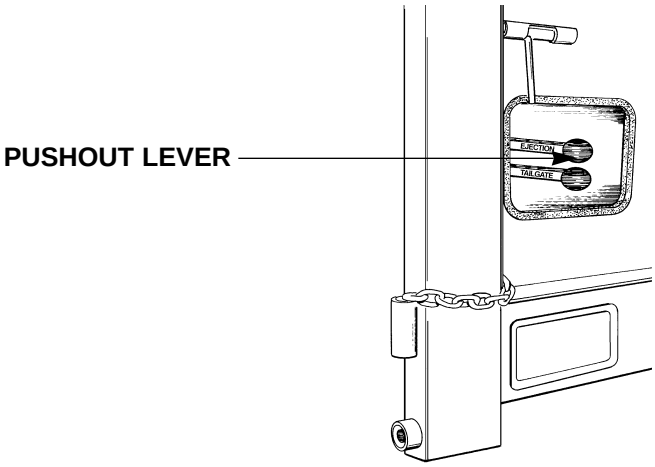


⚠WARNING

Never drive the unit more than 10 feet with the tailgate in a raised position.

⚠CAUTION

The pushout cylinder remains fully extended. If the unit is going to travel over one mile empty, completely retract the cylinder. When packing is about to resume extend the cylinder and start packing.



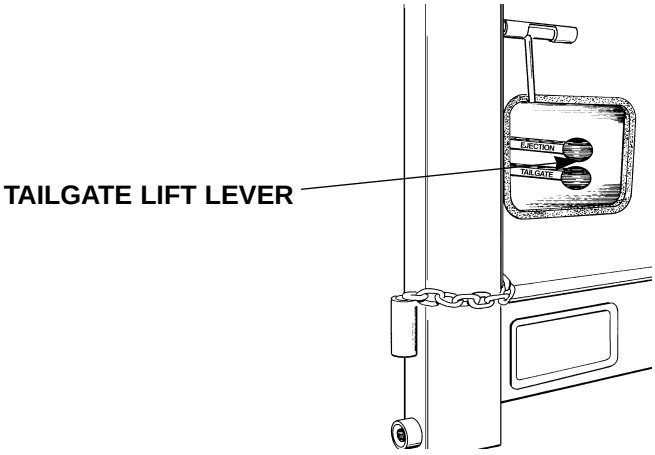
LOWERING THE TAILGATE

1. Pull forward on the tailgate lift lever slowly and in small increments to lower the tailgate a little at a time. AVOID SLAMMING SHUT the tailgate.

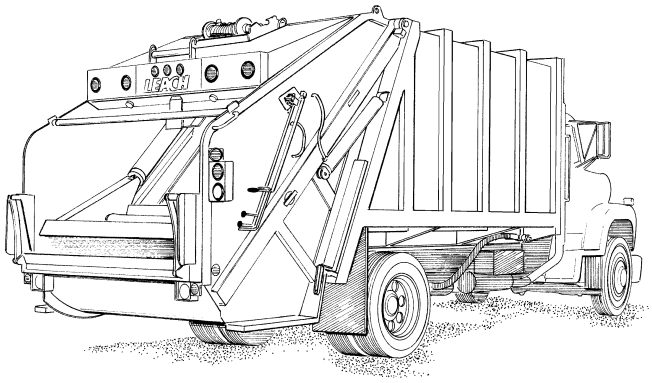
2. Place the tailgate clamps in the closed position and tighten securely.

NOTE:

The "tailgate open" light, backup lights and backup alarm should be off after closing the tailgate.



SHUTDOWN



1. Move the packer panel lever and carrier panel lever to place the packer panel in the “home” position.
2. Put all controls in neutral.
3. Set parking brake.
4. Disengage PTO.
5. Shut off engine.
6. Shut off solenoid dashboard switch.
7. Remove key.
8. Lock truck.

OPERATION

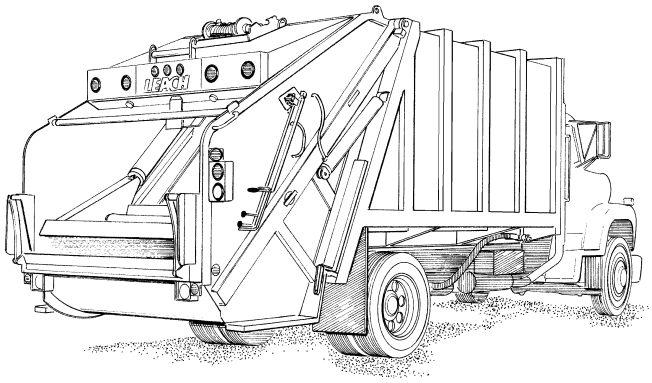
GENERAL REPAIR PRACTICES

⚠WARNING

Proper service and repair is important for the safe, reliable operation of all mechanical products. the service procedures recommended and described in this service manual are effective methods for performing service operations. Some of these service operations require the use of tools specially designed for the purpose. These special tools should be used when and as recommended. Since Leach Company could not possibly know, evaluate and advise the service trade of all possible ways in which service might be done or of the possible hazardous consequences of each way, we have not accordingly , anyone who uses a service procedure or tool which is not recommended by Leach Company must first thoroughly satisfy himself that neither his nor the operator's safety will be jeopardized by the service methods selected. Any person who modifies their equipment must do so in accordance with American National Standards Institute Z245.1-1992. It is important to note that deviating from these procedures could cause damage to the unit or render it unsafe. However, please remember that these procedures are not all inclusive.

PREPARATION FOR SERVICE

Proper preparation is very important for efficient safe service work. A clean work area at the start of each job will allow you to perform the repair as easily and quickly as possible and reduce the incidence of misplaced tools and parts. If the portion of the unit to be repaired is excessively dirty, it should be cleaned before work starts. The cleaning process may include the use of high pressure equipment and strong chemicals. Follow the manufacturer's instructions and precautions during this process. Cleaning will occasionally uncover trouble sources. tools, instruments and parts needed for the job should be gathered before work is started. Interrupting a job to locate tools or parts is a needless delay. Special tools required for a specific job are listed in Section 11.



REPLACEMENT PARTS

Of growing concern to the Leach Company is the use of counterfeit, will-fit or substitute parts. Leach Signature replacement parts are designed and manufactured to exacting standards. The use of counterfeit, will-fit or substitute parts may affect the operation and performance of the unit and will void the warranty. Insure maximum reliability and protect your investment - insist on Leach Signature original factory replacement parts.

LEACH Signature™ Original Factory Parts

SERVICE BULLETINS

In addition to the information provided in this Service Manual, Service Bulletins are issued when needed to cover interim changes or to provide supplementary information necessary for maintaining the refuse unit in a proper safe operating condition. (Check with your authorized Leach dealer.)

GENERAL REPAIR PRACTICES

SAFETY PRECAUTIONS

PRIOR TO PERFORMING ANY SERVICE OR REPAIR

1. Set the parking brake.
2. Put the vehicle in park, or if equipped with a manual transmission, put the unit in gear and remove the ignition key.
3. Place an OSHA approved chock block in front of and behind the front tire.
4. If steel supports are to be used to support the tailgate, place them as shown in Section 9, SERVICE AND REPAIR, under TAILGATE REPAIR.
5. When working on the unit always use the service tools listed in Section 10, SERVICE TOOLS if so directed by the instructions in Section 9, SERVICE AND REPAIR.
6. Whenever dismantling any hydraulic line, valve, or cylinder be sure to turn off the hydraulic fluid flow, relieve the pressure and slowly crack or loosen the fittings.

SAFETY DURING SERVICE AND REPAIR

1. Always wear safety glasses.
2. Disengage the PTO, turn off the ignition and remove the keys before:
   a. Leaving the truck cab.
   b. Examination or lubrication of the PTO, pump or drive shafts.
   c. Entering the front of the body.
   d. Entering the tailgate.
3. Always check to make sure the body access door is locked shut before entering the cab.
4. Pump removal; due to the weight and location of the pump, it is advisable to place a floor jack beneath the pump and apply a slight pressure, so that when the bolts are removed the pump is supported.
5. When it becomes necessary to raise the tailgate for maintenance or repair, do not enter the area beneath the tailgate unless the proper bracing has first been applied. All bracing and supports must be able to support 7500 lbs.
6. Never enter the body when the load is under compaction pressure. Bring the packer plate to the “interrupted cycle” stop position and retract the pushout plate slightly.

WELDING PRECAUTIONS

ELECTRIC WELDERS

1. Electric arc welders should have a separate, fused disconnect circuit.
2. Welders must be used according to the manufacturers specifications.
3. All electric welding should be done in a well-ventilated area.
4. The radiation given off by the arc will destroy the retina of the eye. Wear an approved welder’s helmet.
5. Welding radiation will produce severe burns on unprotected skin, similar to sunburn, so wear heavy clothing. Use natural fiber or leather — avoid synthetic fiber clothing.

OXY-ACETYLENE TORCHES

1. Acetylene is a highly explosive gas which should be treated with the greatest care. At pressures above15 psi, acetylene will explode by decomposition without the presence of air. No other industrial gas has such a wide explosive range.

2. Oxygen will spontaneously ignite in the presence of oil and grease. The hoses, torch handles and regulators must be kept free of petroleum products.

3. Before using the equipment, inspect it for cleanliness and for leaks.

4. Hoses cannot be safely repaired; when they show signs of deterioration, they should be replaced.

5. Return regulators periodically to the distributor for inspection. Store gas bottles upright and out of the sun. Do not attempt to repair or make internal adjustments on the regulators yourself.

6. If you suspect a leak in the system, perform a leak test using an approved leak detection system. DO NOT USE HOUSEHOLD OR LAUNDRY SOAP BECAUSE OF THE DANGER OF OXYGEN COMBINING WITH IT AND EXPLODING.

7. When preparing to use the torch, make certain that the regulator valves are all the way out to the “off” position before the main tank valves are opened to protect the regulators from sudden impact of tank pressure.

8. When opening the tank valves, stand alongside of the regulators, out of the way, in case they blow out.

9. Backfiring or “machine gunning” at the torch is very dangerous and can lead to a major explosion.

10. Welding should be done in a location well away from flammable materials.

REMOVAL, DISASSEMBLY AND REPAIR

1. Cleanliness is very important; dirt is the number one cause of wear in bearings, bushings and especially in hydraulic components.

2. Inspect hydraulic components for leaks before cleaning. The dirt buildup on the component can aid in tracing fluid leaks.

3. Clean hydraulic connections before removal to prevent dirt from entering the component.

4. Loosen hydraulic fittings slowly to release pressure.

5. Cap hydraulic fittings immediately after removal to prevent fluid from leaking.

6. Clean the component in non-flammable solvent before disassembly.

7. Inspect the component after cleaning for signs of wear or external damage.

8. When disassembling a component, note the position of each part as it is removed to aid in reassembly.

9. During disassembly note the condition of each part as it is removed to aid in diagnosing problems and to help prevent them in the future.

10. Clean and inspect disassembled parts for wear, cracks,dirt, etc.

11. After cleaning and inspection, reusable hydraulic parts should be immediately coated with clean fresh hydraulic fluid to prevent rust formation. If these parts are not going to be reinstalled immediately, they should be wrapped in a clean lint free cloth or paper to prevent nicks or scratches.

12. When repacking a cylinder, or resealing a valve, replace all seals and o-rings that are disturbed during repair. The price of a few seals is very little compared to a return repair job.

GENERAL REPAIR PRACTICES

REASSEMBLY AND INSTALLATION

1. Assemble parts in the same position as removed.
2. Align parts accurately before mating.
3. Inspect o-ring and seal grooves for sharp edges, nicks or burrs before installing new sealing parts.
4. Lubricate all new sealing parts with clean, fresh hydraulic fluid before installation.
5. Use care not to damage new sealing parts on reassembly.
6. Use correct torque values when reassembling and installing components. See CAPSCREW MARKING AND TORQUE VALUES later in this section.
7. Always check the hydraulic fluid in the hydraulic tank after performing any service or repair of the hydraulic system.
8. Always lubricate components with grease fittings after they have been repaired and reinstalled.
9. Use only Leach Signature replacement parts.

NOTE:

See Section 9, SERVICE AND REPAIR for specific repair instructions.

ELECTRICAL TESTING

The electrical system used on the unit consists of various lights, switches and wiring. Testing the components and wiring can be accomplished by two simple checks; CHECKING FOR VOLTAGE and CHECKING CONTINUITY.

CHECKING FOR VOLTAGE

A test light is used to check for the presence of electricity in a live circuit. Connect the test light clip to a good ground and the probe at the point where the presence of voltage is to be checked. If voltage is present, the light will be on...if no voltage is present, the light will be off.

CHECKING CONTINUITY

A continuity tester is used to check the ability of a conductor to allow current to pass. A continuity tester uses a self contained power source and should never be used on alive circuit. Connect the clip to one side of the component to be tested and touch the probe to the other side. If the component has the potential to pass current, has continuity, the light will be on ...if the component is not able to pass current, there is no continuity and the light will be off.

WELDING

1. Completely clean out an old weld before rewelding.
2. When repairing a cracked weld, the old weld should be completely removed before rewelding.
3. When adding a part or attachment be sure; the metal is clean before welding, the part is properly located and the weld will not cause damage to adjacent parts.
4. Use the following rods (rod-AWS number) for welding:

Body (except top hinge area)	E6010, E6011, E6013
Top hinge area	E7018
Tailgate	E6010, E6011, E6013
Carrier plate	E6010, E6011
Packer plate	E7018

5. Use ER-70S-6 wire for all locations.

GENERAL REPAIR PRACTICES

LIFTING INSTRUCTIONS

Because of the size and weight of the major components found on the unit, it is necessary to use suitable lifting devices for removal. The following components require lifting devices for removal: cylinders, carrier panel, packer panel, pushout panel and tailgate.

CAPACITY OF LIFTING DEVICE REQUIRED FOR REMOVAL

Cylinders . . . . . 500 lbs. (227 kg.)
Telescopic Pushout Cylinders . . . . . 1000 lbs. (454 kg.)
Carrier Panel . . . . . 1600 lbs. (726 kg.)
Packer Panel . . . . . 1600 lbs. (726 kg.)
Pushout Panel . . . . . 2800 lbs. (1270 kg.)
Tailgate . . . . . 7500 lbs. (3402 kg.)

SLING STRAP SPECIFICATIONS

Nylon sling straps should be used for the removal of cylinders. The following specifications should be used to determine the type of sling straps to use for lifting.

Type USS-26-EN1
Rating
Vertical lift . . . . . 4800 lbs. (2177 kg.)
Choker lift . . . . . 3600 lbs. (1633 kg.)
Basket lift . . . . . 9600 lbs. (4354 kg.)
Width . . . . . 2 in.
Length . . . . . depends on type of lifting device used.

CHAIN AND HARDWARE SPECIFICATIONS

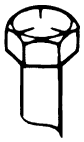
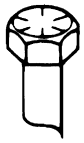
Chains should be used to lift and/or support the carrier and packer panel, pushout panel and tailgate. The following specifications should be used to determine the type of chain and hardware to use for lifting.

Chain
- Type . . . . . D.O.F. (Double Branch, Oblong link, Foundry Hook)
- Size . . . . . ½ in.

Hammer locks . . . . . ½ in.
Oblong rings . . . . . ½ in.

GENERAL REPAIR PRACTICES

CAPSCREW MARKING AND TORQUE VALUES

Usage	Much Used	Used at Times	Used at Times
Capscrew Diameter & Minimum Tensile Strength PSI	To ¾ - 120,000 To 1 - 115,000	To ⅝ - 140,000 To ¾ - 133,000	150,000
Quality of Material	Min. Commercial	Med. Commercial	Best Commercial
SAE Grade Number	5	6 or 7	8
CAPSCREW HEAD MARKINGS Manufacturer's marks may vary. These are all SAE Grade 5 (3-line.)			
Capscrew Body Size (Inches) - (Thread)	**Torque Ft-Lb (kg m)**	**Torque Ft-Lb (kg m)**	**Torque Ft-Lb (kg m)**
¼ - 20	8 (1.11)	10 (1.38)	12 (1.66)
- 28	10 (1.38)		14 (1.94)
5/16 - 18	17 (2.35)	19 (2.63)	24 (3.32)
- 24	19 (2.63)		27 (3.73)
⅜ - 16	31 (4.29)	34 (4.70)	44 (6.09)
- 24	35 (4.84)		49 (6.78)
7/16 - 14	49 (6.78)	55 (7.61)	70 (9.68)
- 20	55 (7.61)		78 (10.79)
½ - 13	75 (10.37)	85 (11.76)	105 (14.52)
- 20	85 (11.76)		120 (16.60)
9/16 - 12	110 (15.21)	120 (16.60)	155 (21.44)
- 18	120 (16.60)		170 (23.51)
⅝ - 11	150 (20.75)	167 (23.10)	210 (29.04)
- 18	170 (23.51)		240 (33.19)
¾ - 10	270 (37.34)	280 (38.72)	375 (51.86)
- 16	295 (40.80)		420 (58.09)
⅞ - 9	395 (54.63)	440 (60.85)	605 (83.67)
- 14	435 (60.16)		675 (93.35)
1 - 8	590 (81.60)	660 (91.28)	910 (125.85)
- 14	660 (91.28)		990 (136.92)

NOTES:

1. *Always use the torque values listed above when specific torque values are not available.*
2. *The above is based on use of clean, dry threads.*
3. *Reduce torque by 10% when engine oil is used as a lubricant.*
4. *Reduce torque by 20% if new plated capscrews are used.*
5. *General Formula for calculating Torques is as follows: Torque in Inch Lbs. = .2 x Nominal Diameter of Screw x Loads in Lbs., where Load = 80% of Yield Strength, expressed in Lbs., not pounds per square inch.*

SPECIFICATIONS

HYDRAULIC FLUID

To serve its purpose and give long and satisfactory service, hydraulic fluid must possess desirable physical and chemical characteristics. Stability over a wide range of temperatures and under agitation is very important.

Premium hydraulic fluids should be used in Leach hydraulic systems. In addition to the above characteristics selected additives should be incorporated to provide additional resistance to wear, corrosion, oxidation, decomposition and foaming. All additive blending should be done by the lubricant supplier so that they are compatible with each other.

A reputable lubricant supplier backed by a reputable oil company is great assurance of obtaining high quality products and generally speaking, higher quality is worth the higher initial cost.

LEACH HYDRAULIC FLUID RECOMMENDATION

All Leach hydraulic systems are factory filled with a high quality anti-wear hydraulic fluid meeting an ISO 32 specification. On units put into service where there are high ambient temperatures or sustained high duty cycles, it may be desirable to change the fluid to an ISO 46 specification (higher viscosity). In colder climates or light duty, an ISO 22 might be more appropriate. The International Standards Organization assigns specification numbers so that a consumer receives the same product from various suppliers.

GRADE ISO/VISCOSITY	22	32	46
AGMA NO	—	—	1
Gravity API	33	31	31
Flash,° F	375	380	390
Pour Point	-20	-20	-20
Viscosity:			
SSU @100° F	112	158	228
SSU @ 210° F	40	44	48
cSt @ 40° C	21	30.5	44
cSt @ 100° C	4.1	5.2	6.5
Viscosity Index	98	99	99
ASTM Oxidation Test (Hours to 2.0 Neut. No.)	2500	2500	2500
ASTM Rust Test, A & B	Pass	Pass	Pass
Foam Test	Pass	Pass	Pass
Vickers Vane Pump Test	Pass	Pass	Pass
Dielectric Strength (ASTM 877) EC # @ 180° F	25Kv 40-37-3(10)	25Kv 40-37-3(15)	25Kv 40-37-3(15)

⚠CAUTION **Do not use engine oil, automatic transmission fluid (ATF) or add diesel fuel or kerosene to the hydraulic fluid. Service life of all hydraulic system components may be adversely affected.**

HYDRAULIC SYSTEM	ALPHA	BETA	DELTA
Approximate Capacity	45 Gallons	45 Gallons	45 Gallons
Filtration, Suction Line	Reusable wire, mesh type	Reusable wire, mesh type	Reusable wire, mesh type
Filtration, Return Line	Disposable filter element	Disposable filter element	Disposable filter element
Pump	Positive displacement gear type	Positive displacement gear type	Positive displacement gear type
Pump Capacity	42 GPM @ 1200 RPM	42 GPM @ 1200 RPM	35 GPM @ 1200 RPM
System Pressure	2150 PSI (148 BAR)	2300 PSI (157 BAR)	2300 PSI (157 BAR)

LUBRICANTS

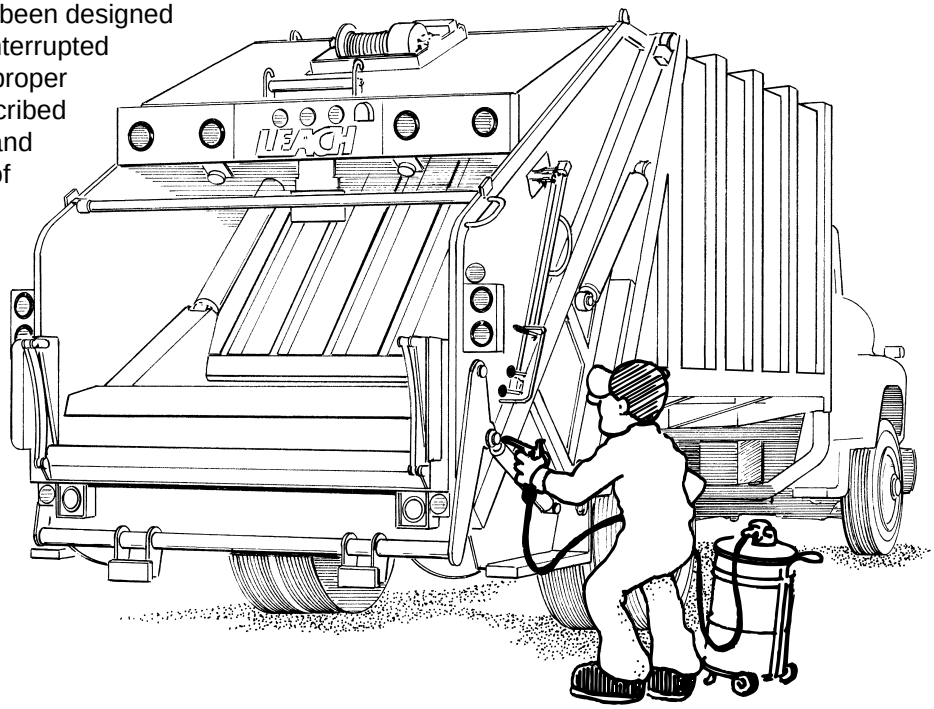
Oil . . . . . .SAE #10 or equivalent Grease . . . . . Multiservice (quality grade)

SPECIFICATIONS

PREVENTIVE MAINTENANCE

GENERAL

The Alpha, Beta and Delta have been designed for long periods of efficient uninterrupted operation. Careful attention to proper preventive maintenance, as described in this section, will ensure and extend trouble-free operation of the unit. Particular attention to correct lubrication of the unit and maintenance of the return filter, are probably the two most vital areas of preventive maintenance required. The objective of preventive maintenance is to anticipate and prevent operational difficulties before they require extended shut down for costly repairs.



OPERATING AND MAINTENANCE RECORDS

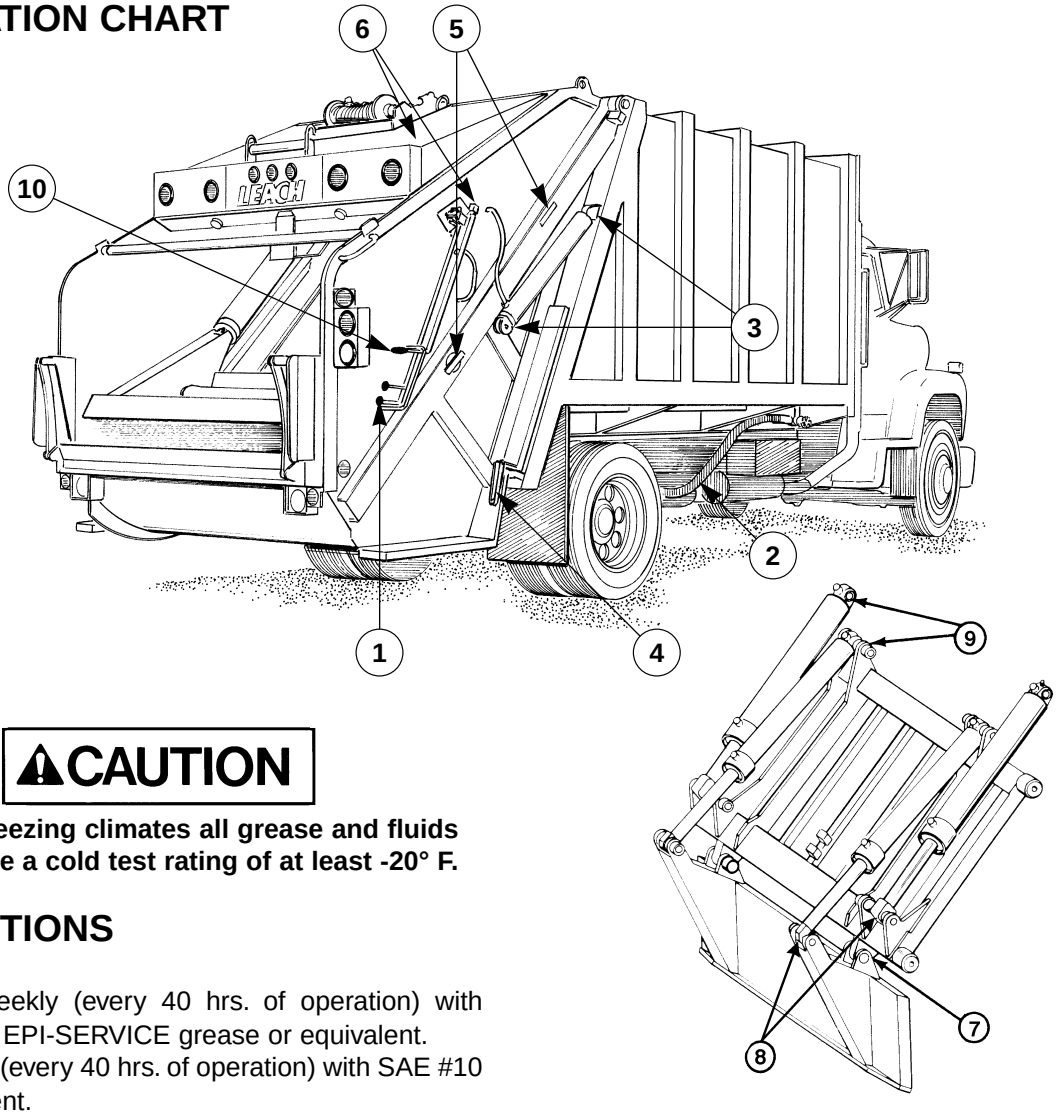
Prepare and adhere to a maintenance schedule. Keep detailed records of all maintenance performed. Regularly inspect operating and maintenance records for deviations from normal operating conditions. Analyze the records for indications of potential trouble.

NOTE

Occasionally distributors will receive service bulletins from Leach Company concerning updated maintenance information. Keep those bulletins with this manual and make notes at the appropriate places in the manual referencing the updated information.

PREVENTIVE MAINTENANCE

LUBRICATION CHART



⚠CAUTION

In below freezing climates all grease and fluids should have a cold test rating of at least -20° F.

INSTRUCTIONS

- ● Grease weekly (every 40 hrs. of operation) with MOBILUX EPI-SERVICE grease or equivalent.
- ■ Oil weekly (every 40 hrs. of operation) with SAE #10 or equivalent.

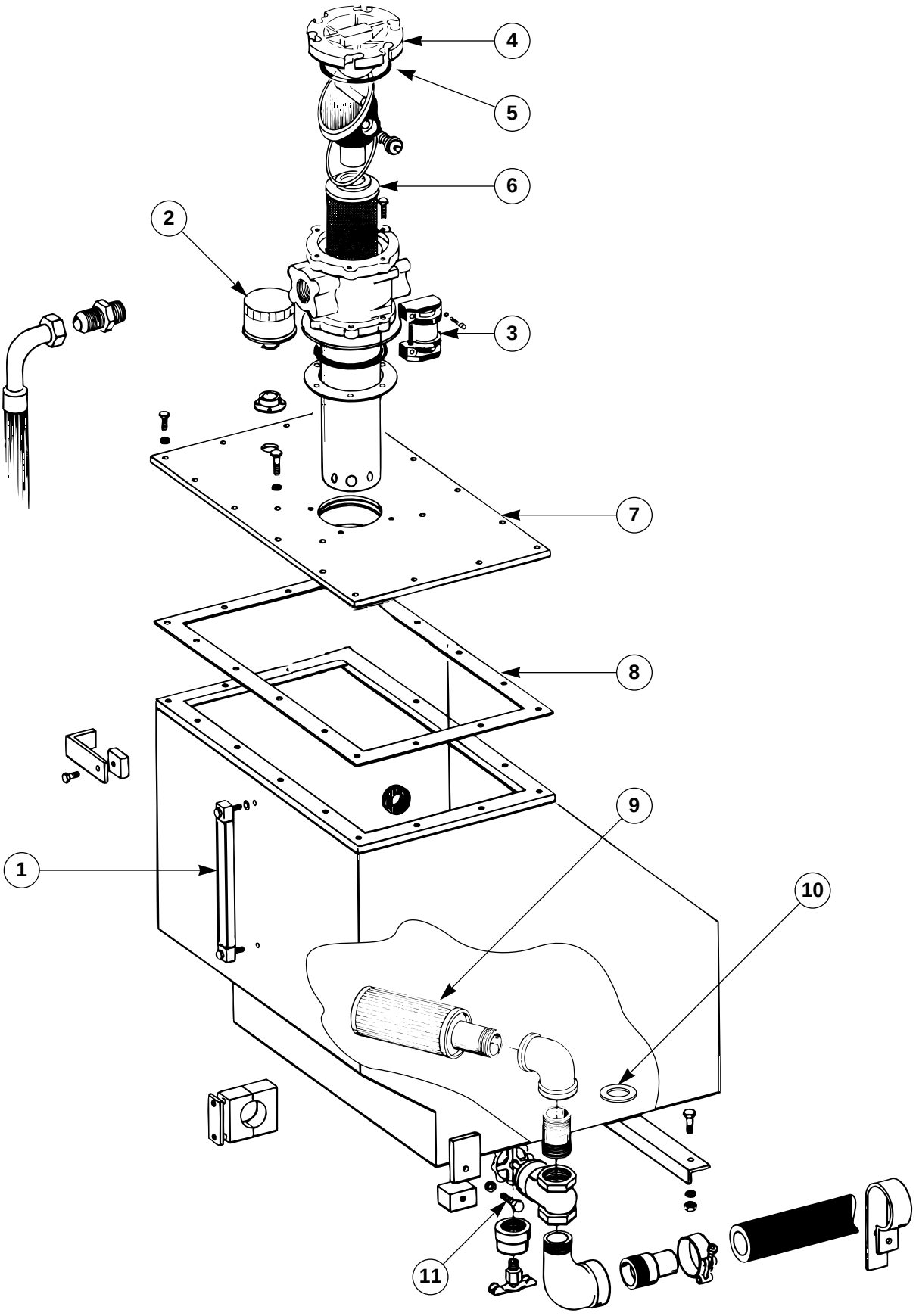
ILLUS.#	LUBE POINT	QTY	NOTE
■ 1	Control levers	2	
● 2	PTO shaft	2	
● 3	Tailgate lift cylinders (top and bottom)	4	
● 4	Tailgate clamps	2	
● 5	Rollers	4	1 & 2

NOTES:

1. Move roller track access covers to grease roller.
2. Rollers need lubrication — roller tracks do not! Grease on tracks will only cause rollers to slide. Keep tracks clean and dry.
3. Remove top covers for access to lube points.

ILLUS.#	LUBE POINT	QTY	NOTE
	NOTE *The packer panel must be in the home position to lubricate the following lube points.*		
● 6	Packing lever control linkage	10	3
● 7	Packer panel pivot	2	
● 8	Operating cylinder rod ends	4	
● 9	Operating cylinder case ends	4	3
● 10	Optional control levers	2	
● Not shown	Pushout cylinder pivot pins	4	

PREVENTIVE MAINTENANCE



PREVENTIVE MAINTENANCE

HYDRAULIC SYSTEM SERVICE

(See accompanying Hydraulic System illustration)

Proper maintenance of the hydraulic components is of vital importance to the service life of the system and the operation of the unit as a whole.

CHECKING FLUID LEVEL (DAILY)

Position and fully retract the pushout, carrier, and packer cylinders to check the fluid level. (1) When checking the fluid level in the hydraulic tank, also note any frequent or sudden loss of fluid. This may indicate leakage, which must be traced and corrected to avert equipment failure and possible damage to other components.

If low, fill the hydraulic tank to the “NORMAL FILL LEVEL” with hydraulic fluid as specified in Sec. 4 SPECIFICATIONS according to operating and weather conditions.

CLEAN TANK BREATHER (WEEKLY)

Clean the air breather (2) every week. Replace a breather that cannot be cleaned adequately.

CHECK / REPLACE RETURN LINE FILTER ELEMENT

The return line filter is a vital component of the hydraulic system. Without proper filtration problems are bound to occur among the hydraulic system components. Stick to the strict maintenance schedule for this item.

Time Lapse Recommendations for Element Replacement

1. After the first 20-hours of hydraulic pump operation.
2. After the next 50-hours of hydraulic pump operation.
3. Thereafter, every 250-hours of hydraulic pump operation or sooner, if so indicated by the filter replacement indicator (3).

The condition of the filter element must be checked weekly by looking at the visual indicator on the filter. Refer to item 3 on the tank illustration.

NOTE

Under severe operating conditions the filter life may be reduced. Replace the filter element regardless of elapsed time if the suction indicator is in the red zone.

REPLACEMENT OF FILTER ELEMENT

(See Hydraulic System Illustration)

1. Remove filter cover (4).
2. Remove o-ring (5).
3. Remove element (6) and discard.
4. Install a new element (6).
5. Coat a new o-ring (5) with fresh hydraulic fluid and install in filter cover (4).
6. Install the cover and secure to the bowl with the attaching hardware.
7. Check the fluid level and replenish with fresh fluid as described earlier in this section under CHECKING FLUID LEVEL.

⚠CAUTION

Extended operation of the unit without proper filtration will result in reduced service life of hydraulic system components.

CLEANING HYDRAULIC STRAINER (MONTHLY)

1. Remove cover (7) and gasket (8).
2. Unscrew and remove strainer (9).
3. Clean strainer thoroughly in a suitable cleaning solvent.
4. Reinstall strainer.
5. Remove, clean and reinstall magnetic ring (10).
6. Inspect the gasket (8) and replace if necessary.
7. Align the gasket carefully and secure the cover (7) to the tank with the attaching hardware.

FLUSHING HYDRAULIC SYSTEM (YEARLY)

1. Drain all fluid from the hydraulic tank into a suitable container. Dispose of it properly.
2. Wipe off the magnetic ring and wipe out the bottom of the tank.
3. Clean strainer as described previously.
4. Fill the hydraulic tank with fresh fluid as specified in Sec. 5, SPECIFICATIONS, according to operating and weather conditions.
5. Start the unit and operate all hydraulic levers as described in Sec. 3, OPERATION. Leave all hydraulic cylinders in the retracted position and shut down unit.
6. Recheck the fluid level and add fluid as necessary to bring level to the “NORMAL FILL LEVEL” on the sight gauge.

NOTE

Refer to Sec. 9, SERVICE & REPAIR for detailed instructions pertaining to those items requiring repair or replacement.

PREVENTIVE MAINTENANCE

HYDRAULIC SYSTEM SERVICE

CONTAMINATION

It is estimated that as much as 90% of all hydraulic problems may be traced directly to the fluid. It is of utmost importance that all foreign matter be kept from the hydraulic fluid. Invisible quantities of abrasive type contamination may cause serious pump wear, malfunctioning of pumps and valves and sludge accumulations within the system in relatively short periods of time. It is also essential that moisture and water be kept from the hydraulic fluids and system.

COMMERCIAL HYDRAULIC FLUID TESTING

Hydraulic fluid samples should be taken periodically for laboratory analysis. The actual sampling method is critical. It should be done according to ANSI Standard B93.19M(R1980). This standard is available from the National Fluid Power Association, 3333 N. Mayfair Rd., Milwaukee, WI 53222.

Samples should be taken from the center of the reservoir when the fluid is at operating temperature and placed in a clean, dry glass bottle with a nonshedding screw-on cap. The bottle should be labeled with the date, type of fluid, model and serial number of the machine.

Two identical samples should be taken. One for laboratory analysis and one for your own preliminary analysis while you are waiting for the lab report.

We recommend the use of commercial laboratory services for analysis of routine fluid samples taken on a regularly scheduled basis. The cost is about $20 to $30 per sample. The most important analysis are particle count, Spectro-chemical analysis, water content and viscosity.

IN HOUSE HYDRAULIC FLUID TESTING

After your sample has been allowed to stand for 20 to 30 minutes to eliminate air bubbles, hold the bottle up to the light to check whether the fluid is clear or cloudy.

Any visible debris is an indication of a severe solid contamination problem, the source of which must be located and corrected immediately. Common sources of this kind of contamination may be component wear, undersealed reservoir covers or dirty air breather filters.
If the sample is the least bit “cloudy” it is an indication of water contamination, the source of which must be found and eliminated immediately. Common sources are inadequate outdoor storage, unsealed reservoir covers or condensation.

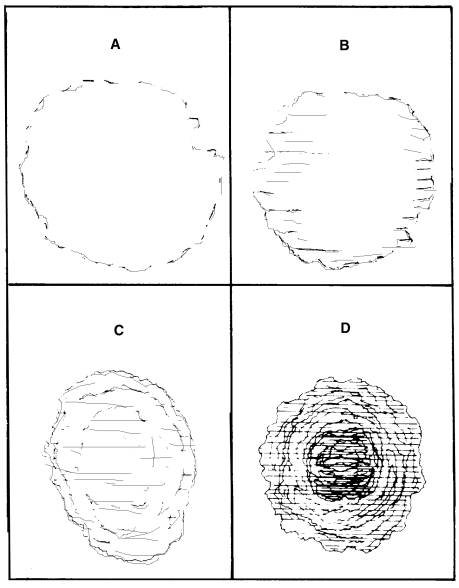
A “BLOTTER SPOT TEST” may also be performed to test for OXIDATION. Place a DROP of fluid on a piece of white blotter paper. Order Leach part number 102480 for 20 sheets.

NOTE:

The Blotter Test will provide an indication that a more complete test may be necessary.

A. If the blotter remains colorless or develops only a light yellow ring, oxidation is under control.
B. If color develops but is uniform throughout, the fluid is still serviceable but should be checked for correct additive content.
C. If the sample shows distinct rings the fluid should be changed.
D. If a distinct dark spot remains in the middle, but a lighter colored fluid migrates outward in the blotter paper the fluid is about to dump (or already has) sludge or other by-products into the system. The time for replacement of this fluid has already passed.

Kits are available from your fluid supplier to test for acid



content in much the same way you would test the condition of swimming pool water. A shift in acid content may indicate a breakdown in the fluid.

KEEP ACCURATE, DATED RECORDS OF ALL PERTINENT INFORMATION GAINED FROM THESE TESTS.

PREVENTIVE MAINTENANCE REQUIREMENTS

DAILY PREVENTIVE MAINTENANCE

Each day perform the following maintenance:

1. INSPECTION

Perform the PRE-OPERATIONAL INSPECTION described in Sec. 3, OPERATION.

⚠ DANGER

Never go under the vehicle with the engine running. Death or serious injury could result.

a. When checking for hydraulic leaks pay particular attention to hose fittings and connections at the cylinders and valves. A build up of hydraulic fluid and dirt indicates a small leak that can probably be corrected by tightening the fitting or connection.

b. Check the visual indicator to determine the condition of the return line element.

c. Inspect the mounting sills and mounting hardware. The springs should be compressed to 3½ inches ± ⅛ inch. The mounting bolts should be torqued to 700 ft. lbs. and inspected daily.

2. CLEANING

Hose the entire unit inside and out with clean water. Make sure no refuse is lodged in the body through or behind the pushout plate especially near the clamp area or rear of the tank. Make sure there is no grease on the pushout bar.

3. LUBRICATION

Frequent inspection of grease points will indicate when lubrication is needed.

4. CONTAINER HANDLING EQUIPMENT

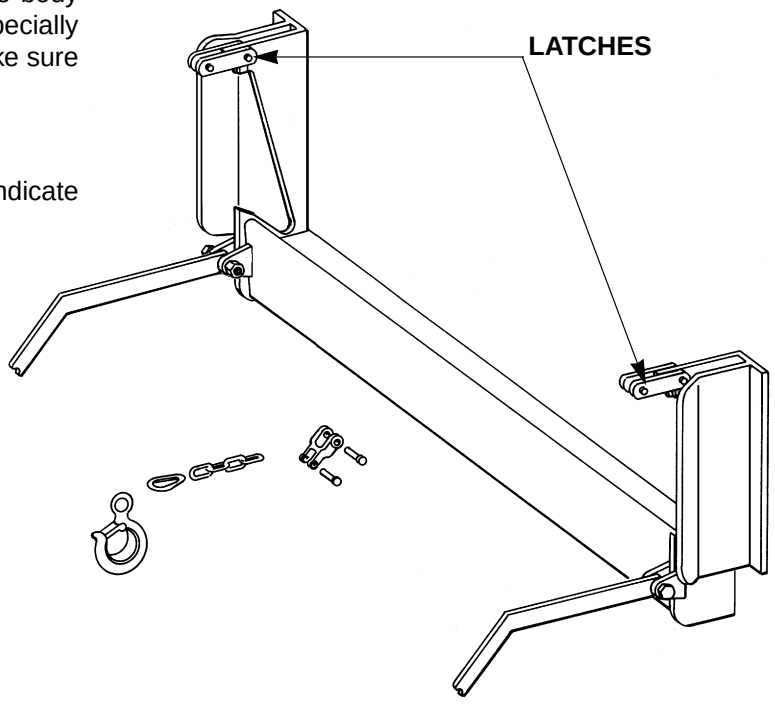
In addition to performing the daily vehicle and packer body pre-operating inspection, also check the container handling system. Each day perform the following inspection.

a. Check the condition and operation of the container latch assemblies. If the latch arms will not latch securely in the assembly do not use the unit.

b. A visual inspection of the wire rope (cable) should identify any broken wires or obvious damage. A visual inspection of the chains should identify any damaged or elongated links.

c. Make a visual inspection of the hook for obvious damage. Make sure that the hook latch is working properly.

d. Check the operation of the container handling system. The lifting mechanism should move smoothly with no jerkiness or binding.



PREVENTIVE MAINTENANCE

WEEKLY PREVENTIVE MAINTENANCE

1. CLEANING
Clean and paint exposed metal surfaces to remove and prevent the formation of rust.

2. INSPECTION
a. In addition to the body mounting hardware which is checked daily, inspect all other accessible mounting hardware and fittings for tightness. Refer to the CAPSCREW MARKING AND TORQUE VALUE CHART provided in Sec. 4, GENERAL REPAIR PRACTICES.

b. Check electrical wiring and insulation for frays, breaks and loose connections.

3. LUBRICATION
Refer to the LUBRICATION CHART in this section and service those items which require weekly lubrication.

4. HYDRAULIC SYSTEM
a. The return line filter element is vital to the service life of the hydraulic system. Check the replacement indicator on the filter assembly weekly. Refer to HYDRAULIC SYSTEM SERVICE for more detailed information about this important item.

b. Check the breather cap on the hydraulic tank. Clean it weekly and replace it if it cannot be cleaned thoroughly or is missing.

NOTE

A leaking breather on the clamp cylinder indicates a defective piston seal which must be replaced as described in Sec. 9, SERVICE AND REPAIR.

5. CHECK-OUT PROCEDURES
Each week perform the CHECK-OUT PROCEDURES listed in Sec. 7 of this manual.

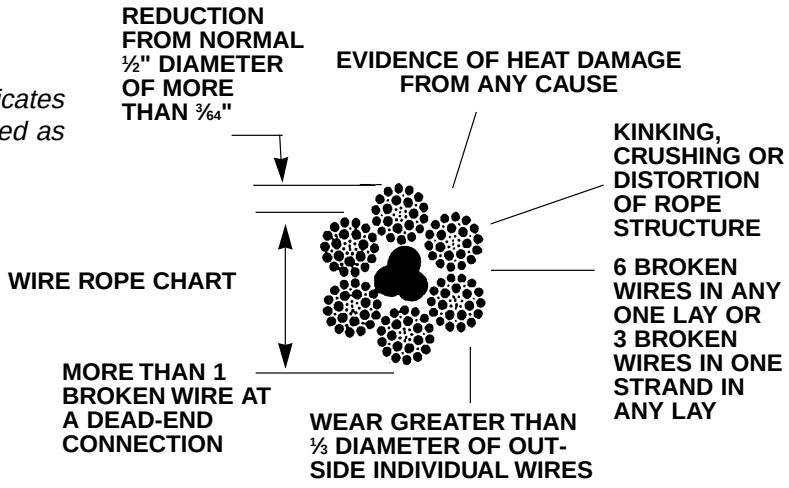
6. CONTAINER HANDLING SYSTEM HARDWARE
Check all container handling system hardware to make sure that no damage exists and that all fasteners are secure.

7. PIVOT POINTS
Check all pivot points for wear and smooth operation.

8. WIRE ROPE (CABLE)
A detailed inspection of all wire rope (cable) should be made weekly or every 40 hours of use — which includes checking the wire rope for damage, deterioration and secure end connections. Damage or deterioration requiring replacement of wire rope is indicated by broken wires, excessive wear, heat damage, corrosion, stretching or distortion as shown in the wire rope illustration below.

NOTE

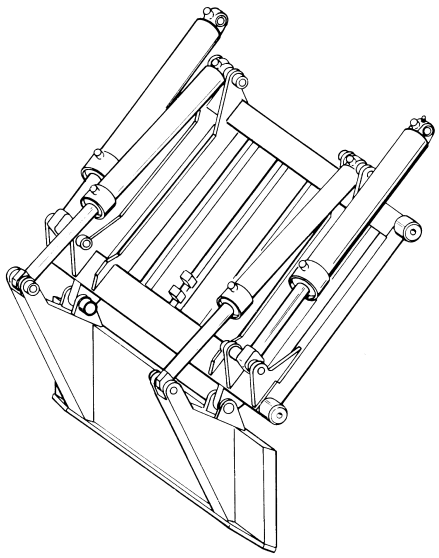
A lay of rope is that length of rope in which one strand of wire makes a complete revolution about the core.


REDUCTION FROM NORMAL ½" DIAMETER OF MORE THAN 3/64"
EVIDENCE OF HEAT DAMAGE FROM ANY CAUSE
KINKING, CRUSHING OR DISTORTION OF ROPE STRUCTURE
WIRE ROPE CHART
6 BROKEN WIRES IN ANY ONE LAY OR 3 BROKEN WIRES IN ONE STRAND IN ANY LAY
MORE THAN 1 BROKEN WIRE AT A DEAD-END CONNECTION
WEAR GREATER THAN ⅓ DIAMETER OF OUTSIDE INDIVIDUAL WIRES

PREVENTIVE MAINTENANCE

MAINTENANCE RECOMMENDATIONS

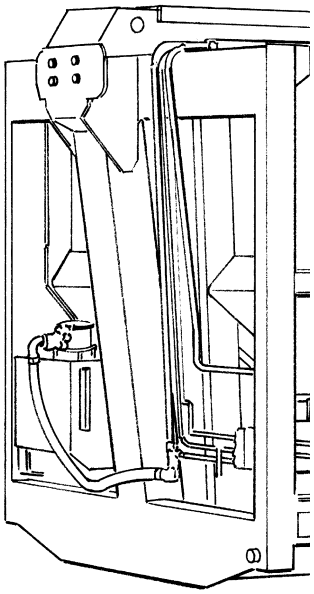
The packer/carrier assembly should be visually inspected every forty (40) hours of operation for cracked or fatigued welds, loose or broken fasteners, worn bearings, pin hubs or pins.



HYDRAULIC SYSTEM

a. Once a month, remove and clean the hydraulic tank fluid strainer as described in HYDRAULIC SYSTEM SERVICE in this section.

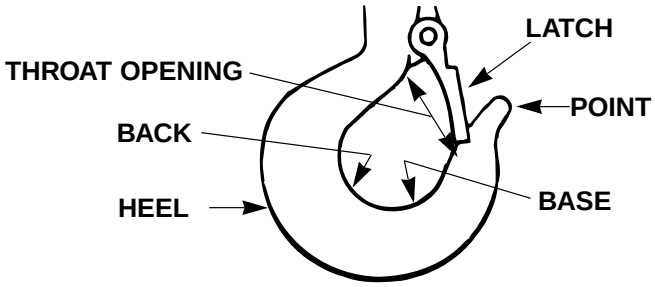
b. Each month check the tailgate lift cylinder air breather. If plugged, replace it with a new breather.



LIFTING HOOK

A thorough inspection of any container lifting hook should be completed once a month consisting of checking for distortion, cracks, nicks, wear, latch engagement and secure end connections. Maximum distortion allowable is an 8 percent increase in the throat dimension or a 10 degree twist in the hook. Cracks, nicks and wear must not exceed 10 percent of any dimension.

Visually inspect before each use for obvious damage.



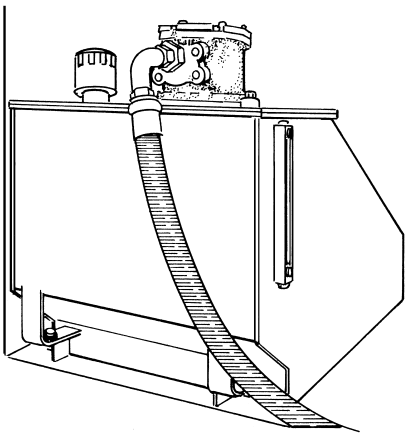
YEARLY PREVENTIVE MAINTENANCE

HYDRAULIC SYSTEM

a. Once a year drain, flush and refill the hydraulic tank as described under HYDRAULIC SYSTEM SERVICE in this section.

b. Once a year replace the hydraulic tank air breather.

c. Once a year replace the fibrous tailgate lift cylinders' air breathers.



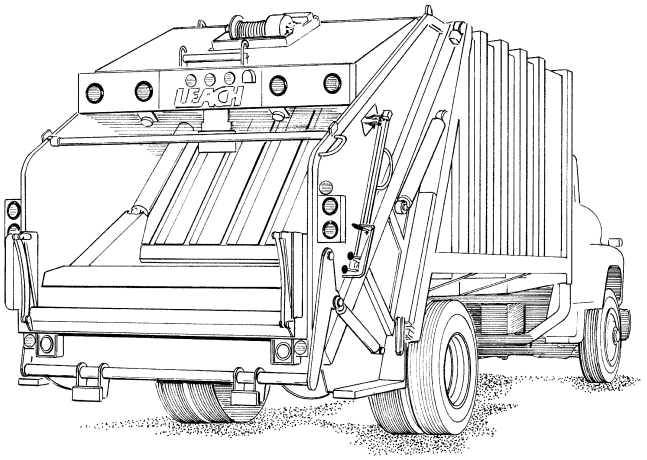
PREVENTIVE MAINTENANCE

GENERAL

The Alpha has been designed to provide long periods of trouble-free operation. Performing the check-out procedures below, at regular weekly intervals, will help to prevent unscheduled downtime.

⚠WARNING

Make sure you know and observe all safety precautions listed in Sec. 2 before performing any of the following check-out procedures. Use extreme caution to avoid coming near any moving parts. Never enter the body of the unit when the truck is running. Make sure the unit is in the correct operational mode as indicated by the OPERATIONAL STATUS block presented at the beginning of each check.



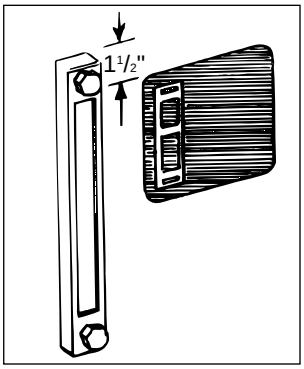
NOTE

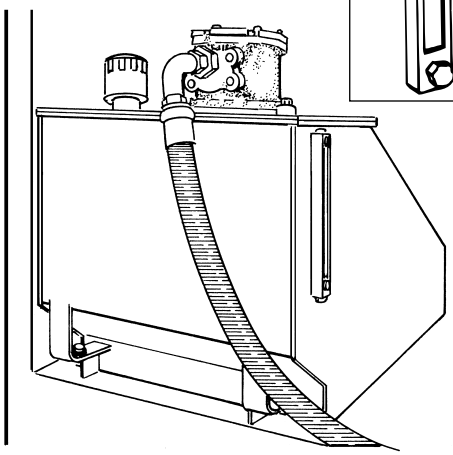
Because of the location of various controls, some checks will require two people.

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

CHECK HYDRAULIC TANK FLUID LEVEL

1. Make sure the tailgate is down and clamped securely.
2. Move the carrier and packer panel levers to position the carrier and packer cylinders in the retract position.
3. Pull the pushout lever to position the pushout cylinder in the retract position.
4. The fluid level should be between the safe range marks on the sight gauge.





IF NOT:

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

5. Add hydraulic fluid for normal operating and weather conditions. See Sec. 6, PREVENTIVE MAINTENANCE for additional information about servicing the hydraulic tank.

CHECK ENGINE SOLENOID SWITCH

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

IF ENGINE SPEEDS UP:

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

The system is grounded. Locate the short and repair as described under ELECTRICAL SYSTEM in Sec. 9, SERVICE AND REPAIR.

CHECK ENGINE SPEED-UP SWITCHES

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

1. Depress the engine speed-up pushbutton. The engine should speed up.

IF NOT:

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

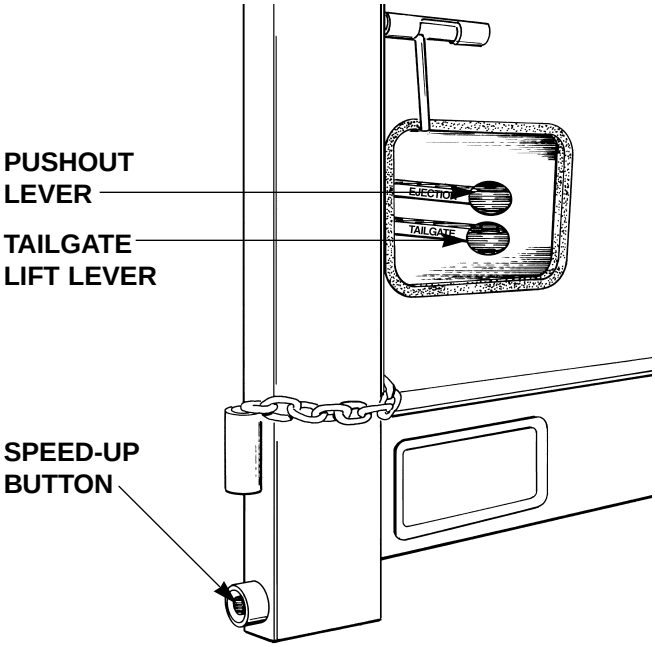
Locate the fault in the wiring or switch and repair. See Sec. 9, SERVICE AND REPAIR–ELECTRICAL SYSTEM.

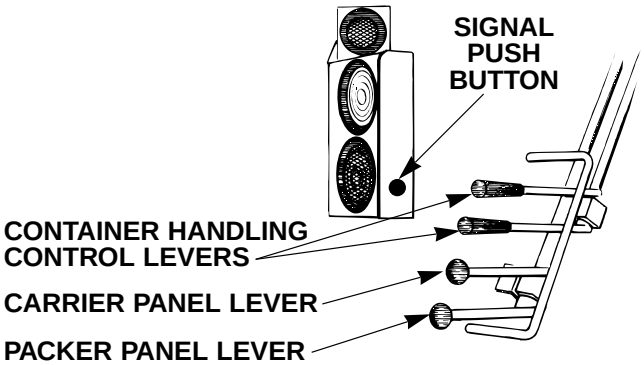
2. Activate carrier panel lever. Engine should speed up.

IF NOT:

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

Locate the fault in the wiring or switch and repair. See Sec. 9, SERVICE AND REPAIR–ELECTRICAL SYSTEM.





CHECK PACKING CYCLE TIME

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

1. Activate both the packer panel lever and carrier panel lever. Using a stopwatch, time a complete cycle. A complete cycle should take 26 to 28 seconds.

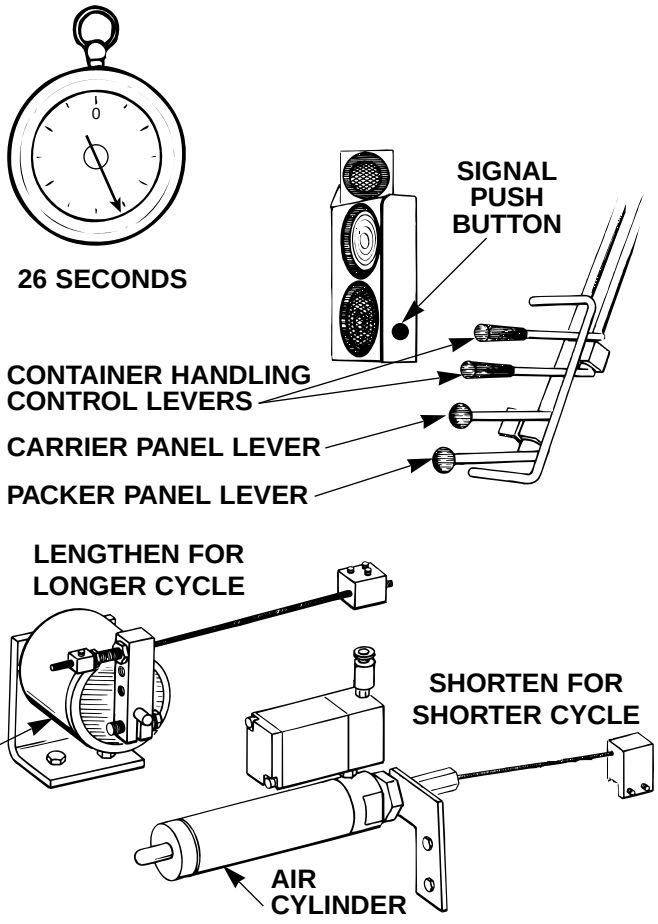
IF NOT:

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

2. Adjust the cable length between the solenoid or air cylinder and throttle linkage as needed to obtain the correct cycle time.

NOTE

It is important the the cycle time is correct before performing the following pressure checks.



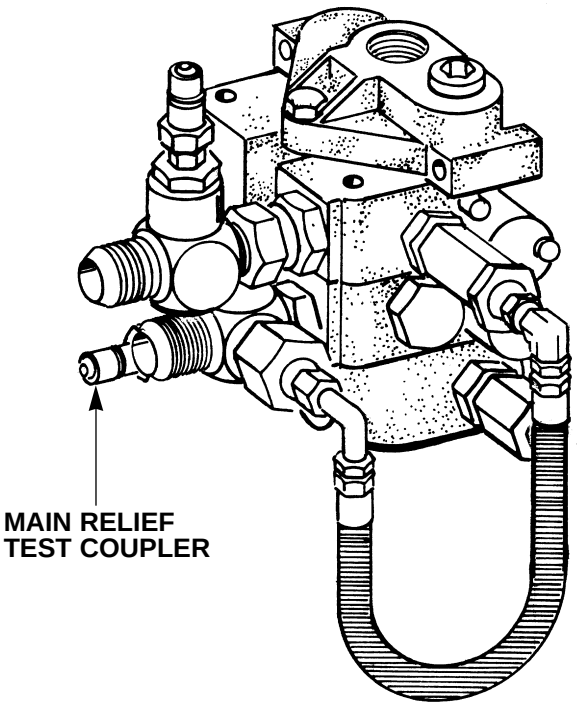
CHECK PRESSURES

The pressure checks provided below will indicate the operating condition of the hydraulic system. Detailed adjustment procedures are provided later in this section and are referenced at the appropriate check-out procedure. Prior to performing pressure checks:

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Install a gauge capable of reading at least 3000 PSI (207 BAR) on the main relief test coupling.

2. Start the unit, engage the PTO and turn solenoid switch ON.



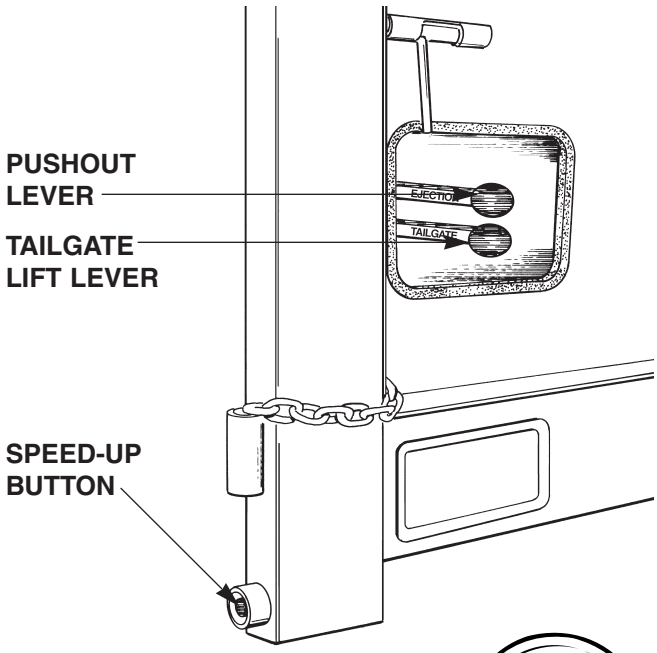
CHECK MAIN LINE PRESSURE

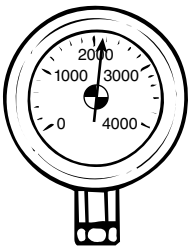
OPERATIONAL STATUS			
Truck Running	PTO Engaged	Sol. Sw.	On

1. Depress speed-up button.
2. Move pushout control lever to fully retract pushout cylinder.
3. Hold lever and read gauge. Pressure should be at least 2150 PSI (148 BAR) but no more than 2200 PSI (152 BAR).

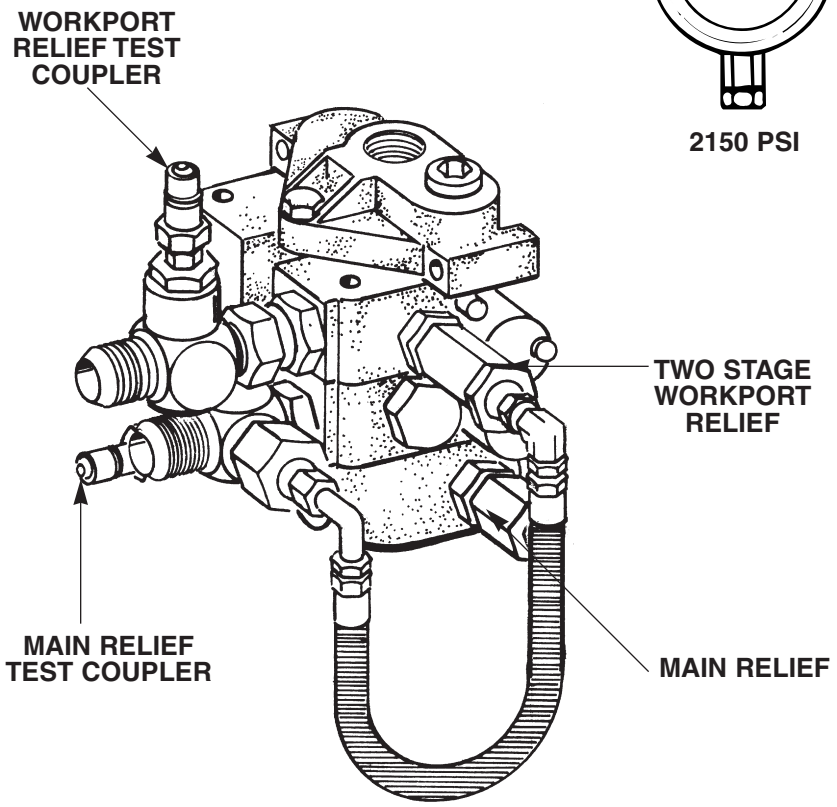
IF NOT:

4. Perform TEST FOR LEAKING Pushout CYLINDER SEAL as described in Section 9, SERVICE AND REPAIR. Start truck, repeat steps 2 and 3 and again check gauge for correct pressure.





2150 PSI



CHECK PUSHOUT PRESSURE

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Connect a gauge to the workport relief test coupler.
2. Start the unit, engage the PTO and turn the solenoid switch on.
3. Unlatch both tailgate clamps.
4. Depress speed-up button.
5. Move the tailgate control lever to the rear to fully raise the tailgate.

NOTE

The tailgate lift time is 24 to 28 seconds.

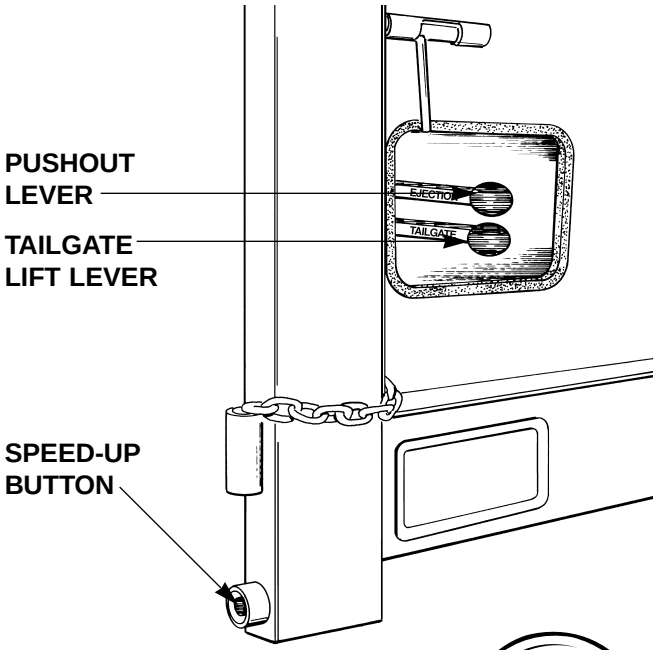
6. Move the pushout control lever to the rear to fully extend the pushout cylinder.
7. While continuing to hold the pushout control lever, observe the reading on the gauge.
8. The pressure should be at 1950 PSI (135 BAR) plus or minus 100 PSI (7 BAR).

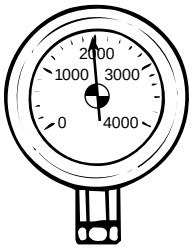
IF NOT:

9. Perform TEST FOR LEAKING Pushout CYLINDER SEAL as described in Section 9, SERVICE AND REPAIR. Start truck, repeat steps 2 and 3 and again check gauge for correct pressure.

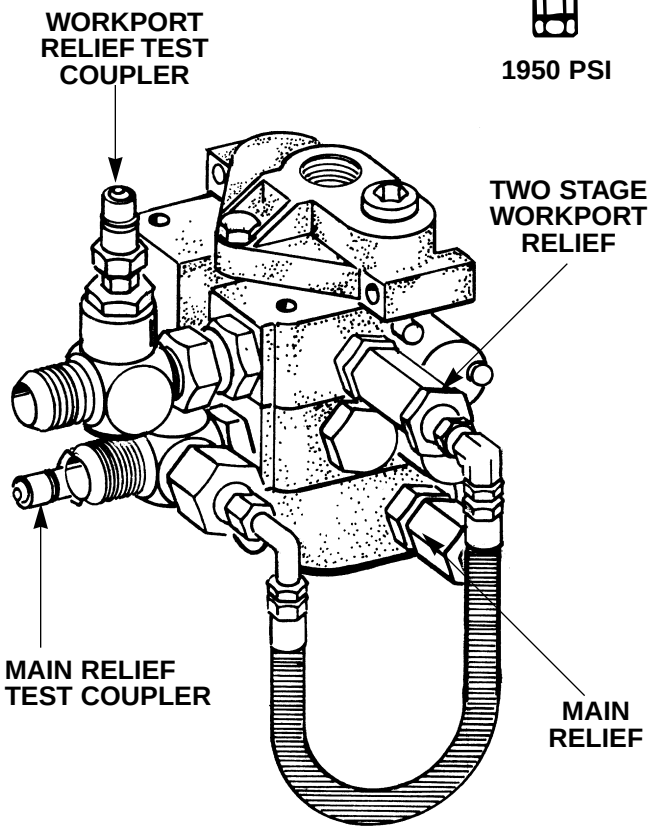
IF NOT:

10. Replace the two stage workport relief.





1950 PSI



CHECK RESISTANCE PRESSURE

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. On Sw.

1. Move pushout control lever to fully extend the pushout cylinder.

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

2. Connect a porta-power with a gauge to the workport relief test coupler.

3. Slowly pump the porta-power and read the gauge to see what pressure the two stage workport relief "cracks" open at. The pressure should be 600 PSI (42 BAR).

IF NOT:

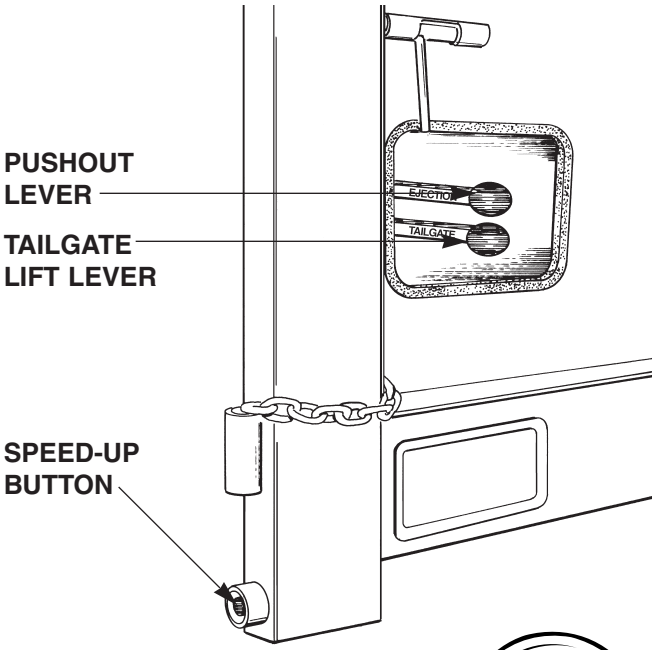
4. Verify all pressure in the signal line is relieved by moving the tailgate control lever forward to relieve any pressure in the circuit. Repeat step 3.

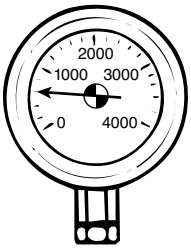
IF NOT:

5. Disconnect signal line at the two stage workport relief.

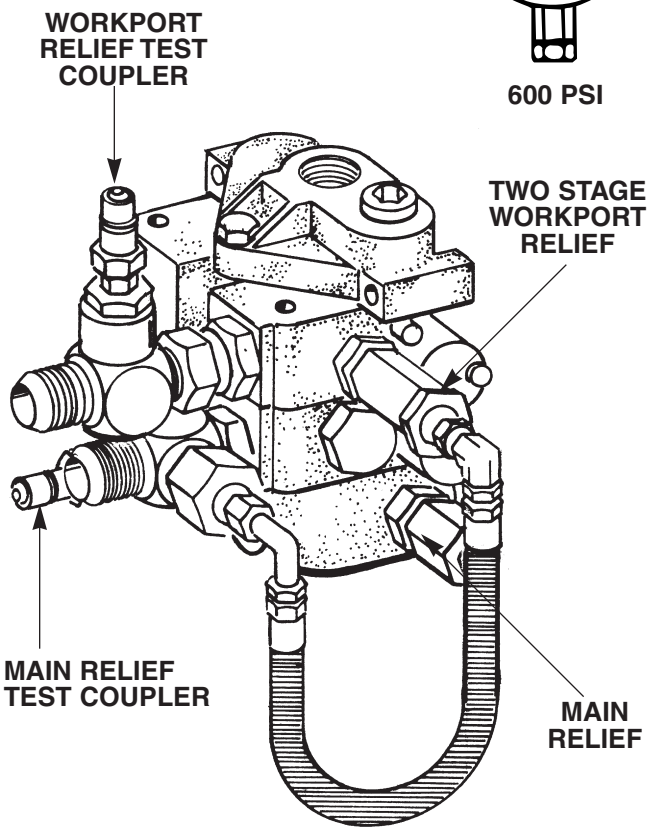
6. Loosen locknut and adjust the relief. If reading was below 600 PSI (42 BAR), turn adjustment clockwise. If reading was over 600 PSI (42 BAR), turn adjustment counter-clockwise.

7. Secure locknut, connect signal line and confirm resistance pressure reading.





600 PSI



CHECK PACKER AND CARRIER PANEL SHIFTING PRESSURES

There are two methods to determine accurate pressure settings.

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Use an electronic pressure gauge that maintains and records maximum system pressures.

2. If an electronic gauge is unavailable and a mechanical gauge must be used, the following procedure is recommended:

   a. Install a 0-3000 PSI (0-207 BAR) pressure gauge at the quick disconnect coupler on the two spool directional valve at front of the unit. Check the main relief pressure as described in Section 7, “Check-Out”, of the Service Manual.

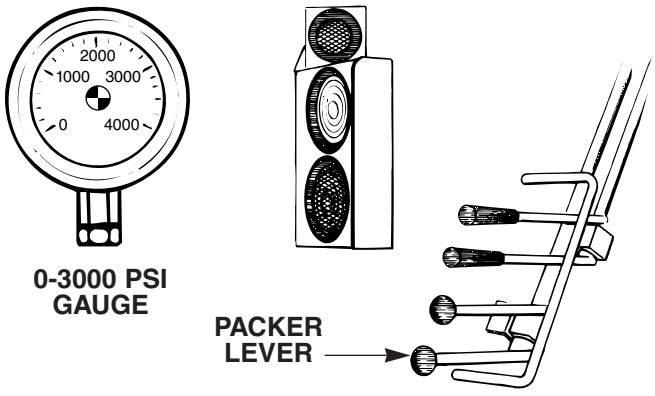
   b. Reduce the main relief setting to below the lowest knockout pressure.

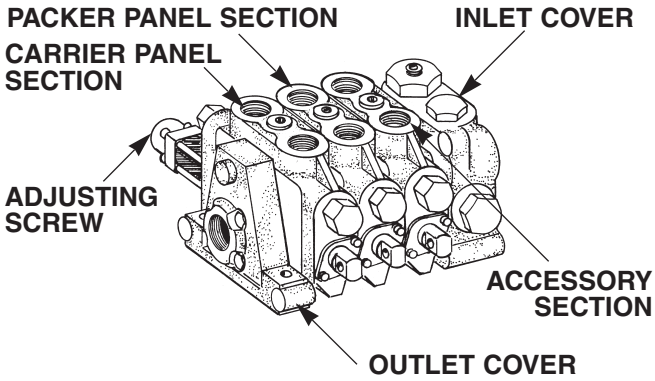
OPERATIONAL STATUS	
Truck Off	PTO Disengaged

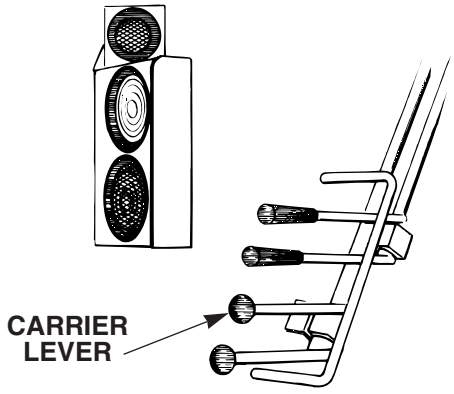
   c. Remove the button plug from the end of the Main Control Valve bonnet using a screwdriver, then shift the Main Control Valve linkage to the detented power position and release, leaving the valve spool in the detented position.

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

   d. While observing the pressure gauge, slowly increase the main relief valve setting. The pressure indicator will increase until the knockout pressure setting is reached and the Main Control Valve spool returns to neutral.







   e. The knockout pressures should be set at 1800 PSI (124 BAR) for the packer panel section and 2000 PSI (138 BAR) for the carrier panel section. If the knockout pressure setting requires adjustment, it may be changed by turning the knockout pressure adjustment screw, located inside the bonnet, clockwise to increase the knockout pressure setting or counter-clockwise to decrease the setting. Once the proper knockout setting has been attained, reinstall the button plug to seal the Main Control Valve.

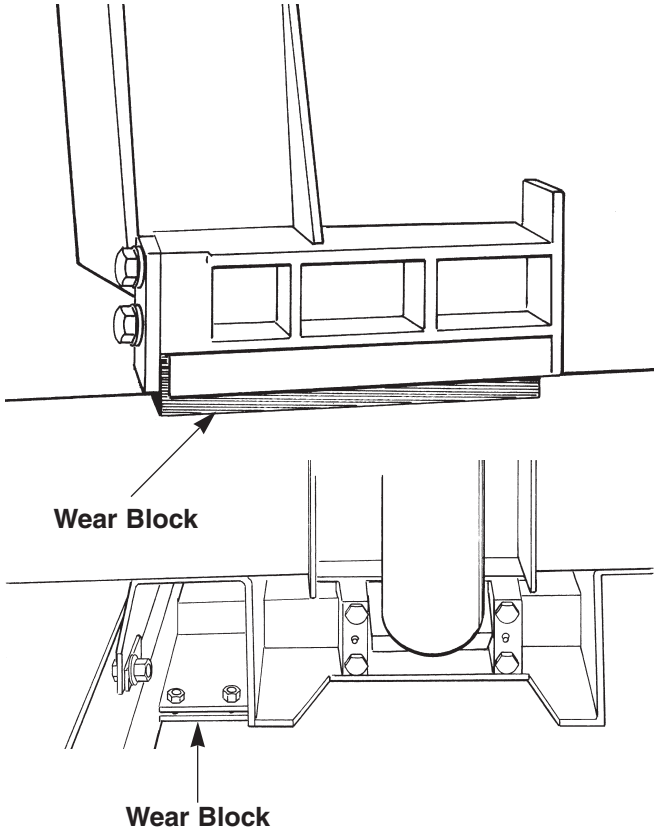
   f. Return the main relief valve pressure setting to its specified value as described previously.

CHECK WEAR BLOCKS

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Visually inspect all wear blocks for excessive wear. These items must be replaced before there is metal to metal contact.

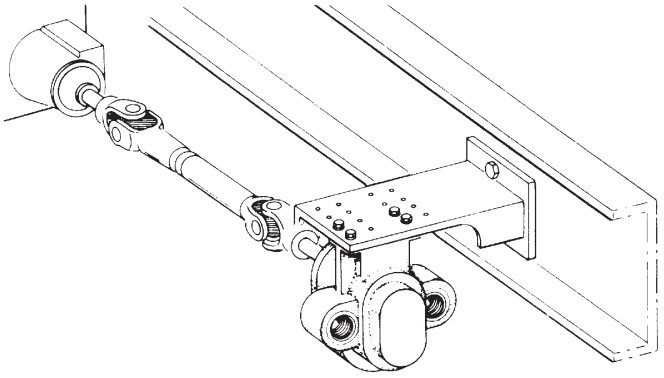
2. Shim or replace worn parts as described in Sec. 9, SERVICE AND REPAIR under PUSHOUT PANEL.



POWER TAKE OFF (P.T.O.)

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Periodically re-torque the mounting bolts or studs as outlined in the P.T.O. manufacturers service manual.

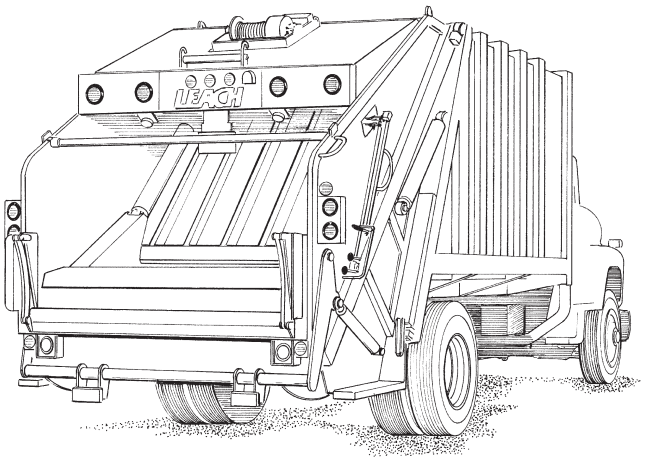


GENERAL

The Beta has been designed to provide long periods of trouble-free operation. Performing the check-out procedures below, at regular weekly intervals, will help to prevent unscheduled downtime.

⚠WARNING

Make sure you know and observe all safety precautions listed in Sec. 2 before performing any of the following check-out procedures. Use extreme caution to avoid coming near any moving parts. Never enter the body of the unit when the truck is running. Make sure the unit is in the correct operational mode as indicated by the OPERATIONAL STATUS block presented at the beginning of each check.



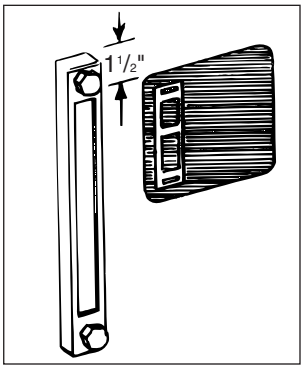
NOTE

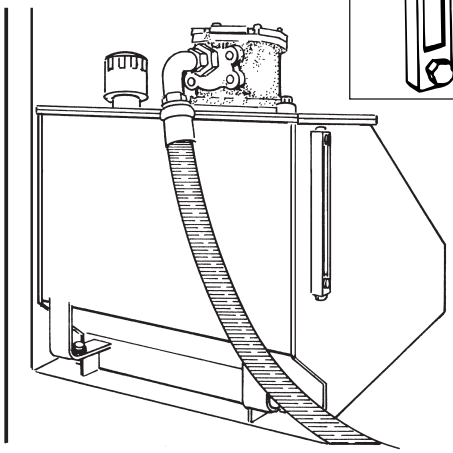
Because of the location of various controls, some checks will require two people.

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

CHECK HYDRAULIC TANK FLUID LEVEL

1. Make sure the tailgate is down and clamped securely.
2. Move the carrier and packer panel levers to position the carrier and packer cylinders in the retract position.
3. Pull the pushout lever to position the pushout cylinder in the retract position.
4. The fluid level should be between the safe range marks on the sight gauge.





IF NOT:

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

5. Add hydraulic fluid for normal operating and weather conditions. See Sec. 6, PREVENTIVE MAINTENANCE for additional information about servicing the hydraulic tank.

CHECK ENGINE SOLENOID SWITCH

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

IF ENGINE SPEEDS UP:

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

The system is grounded. Locate the short and repair as described under ELECTRICAL SYSTEM in Sec. 9, SERVICE AND REPAIR.

CHECK ENGINE SPEED-UP SWITCHES

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

1. Depress the engine speed-up pushbutton. The engine should speed up.

IF NOT:

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

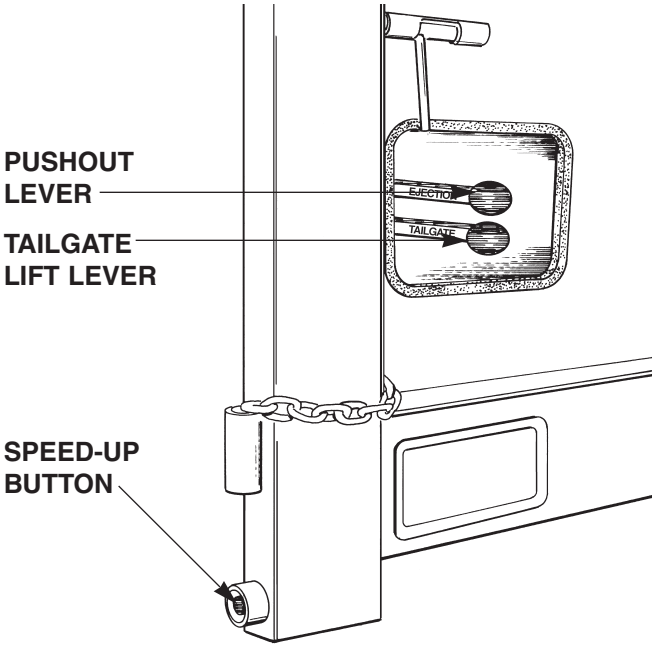
Locate the fault in the wiring or switch and repair. See Sec. 9, SERVICE AND REPAIR–ELECTRICAL SYSTEM.

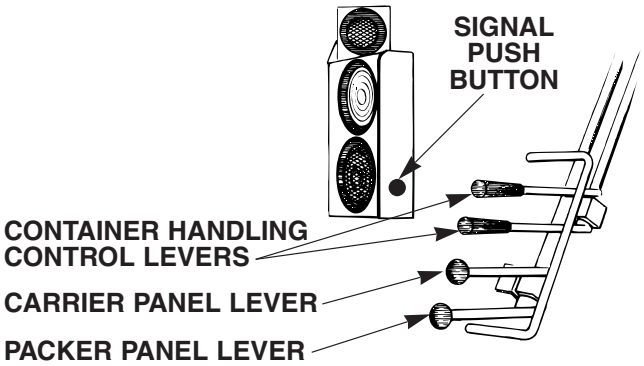
2. Activate carrier panel lever. Engine should speed up.

IF NOT:

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

Locate the fault in the wiring or switch and repair. See Sec. 9, SERVICE AND REPAIR–ELECTRICAL SYSTEM.





CHECK PACKING CYCLE TIME

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

1. Activate both the packer panel lever and carrier panel lever. Using a stopwatch, time a complete cycle. A complete cycle should take 29 to 31 seconds.

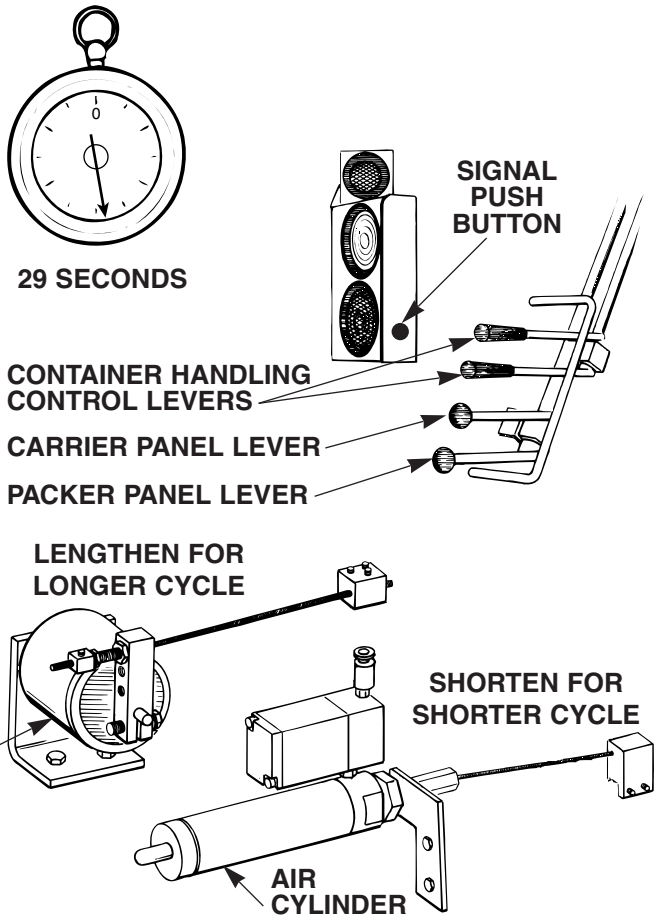
IF NOT:

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

2. Adjust the cable length between the solenoid or air cylinder and throttle linkage as needed to obtain the correct cycle time.

NOTE

It is important the the cycle time is correct before performing the following pressure checks.



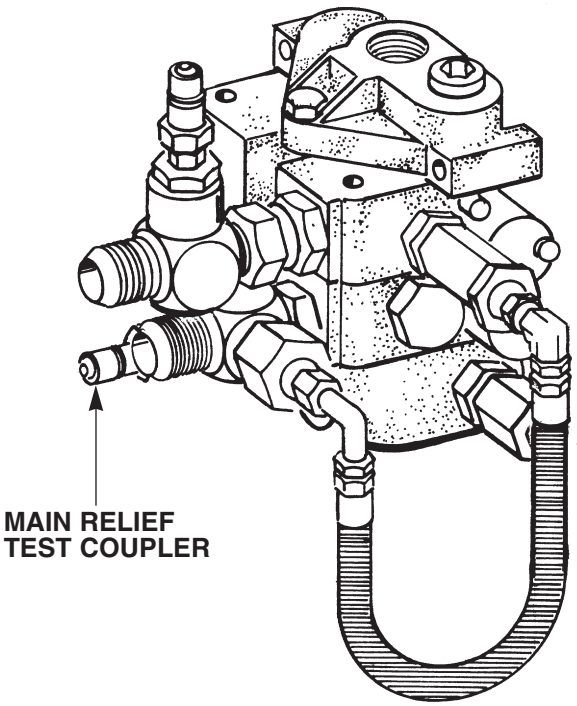
CHECK PRESSURES

The pressure checks provided below will indicate the operating condition of the hydraulic system. Detailed adjustment procedures are provided later in this section and are referenced at the appropriate check-out procedure. Prior to performing pressure checks:

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Install a gauge capable of reading at least 3000 PSI (207 BAR) on the main relief test coupling.

2. Start the unit, engage the PTO and turn solenoid switch ON.



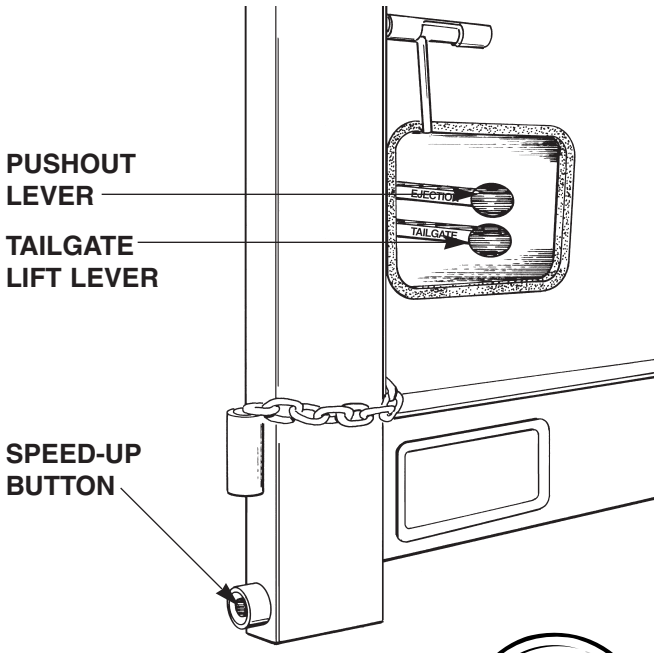
CHECK MAIN LINE PRESSURE

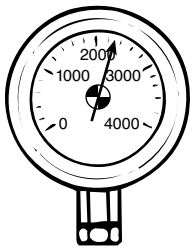
OPERATIONAL STATUS			
Truck Running	PTO Engaged	Sol. Sw.	On

1. Depress speed-up button.
2. Move pushout control lever to fully retract pushout cylinder.
3. Hold lever and read gauge. Pressure should be at least 2300 PSI (157 BAR) but no more than 2400 PSI (165 BAR).

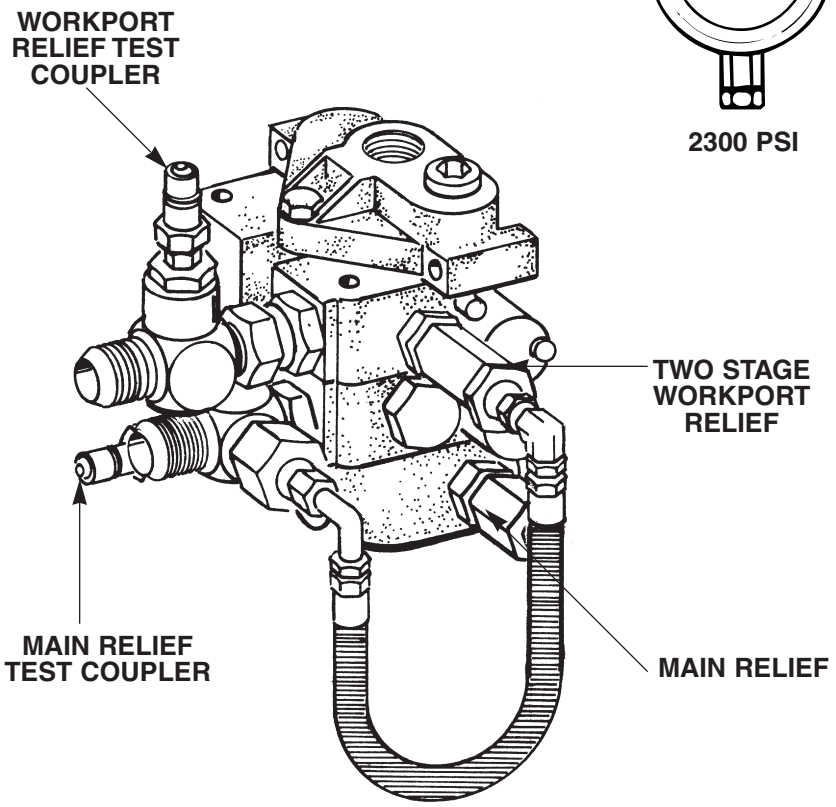
IF NOT:

4. Perform TEST FOR LEAKING Pushout CYLINDER SEAL as described in Section 9, SERVICE AND REPAIR. Start truck, repeat steps 2 and 3 and again check gauge for correct pressure.





2300 PSI



CHECK PUSHOUT PRESSURE

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Connect a gauge to the workport relief test coupler.
2. Start the unit, engage the PTO and turn the solenoid switch on.
3. Unlatch both tailgate clamps.
4. Depress speed-up button.
5. Move the tailgate control lever to the rear to fully raise the tailgate.

NOTE

The tailgate lift time is 24 to 28 seconds.

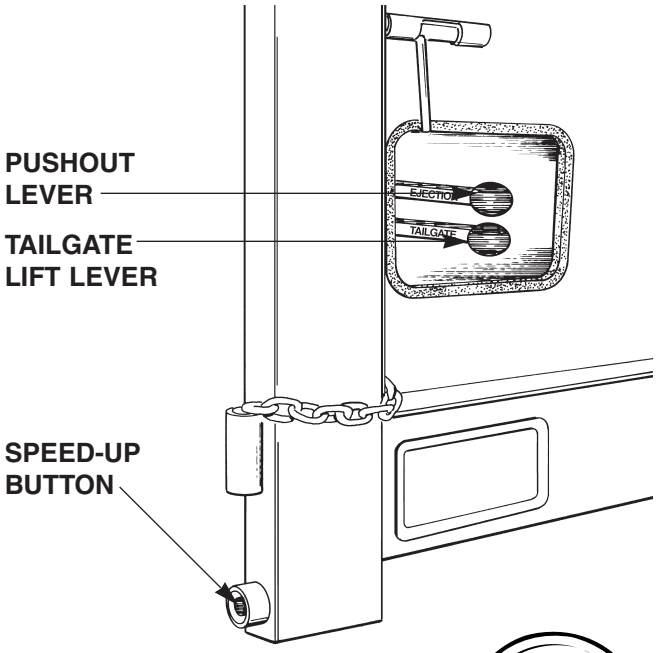
6. Move the pushout control lever to the rear to fully extend the pushout cylinder.
7. While continuing to hold the pushout control lever, observe the reading on the gauge.
8. The pressure should be at 1950 PSI (135 BAR) plus or minus 100 PSI (7 BAR).

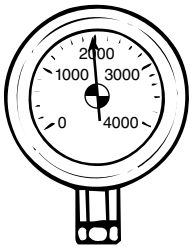
IF NOT:

9. Perform TEST FOR LEAKING Pushout CYLINDER SEAL as described in Section 9, SERVICE AND REPAIR. Start truck, repeat steps 2 and 3 and again check gauge for correct pressure.

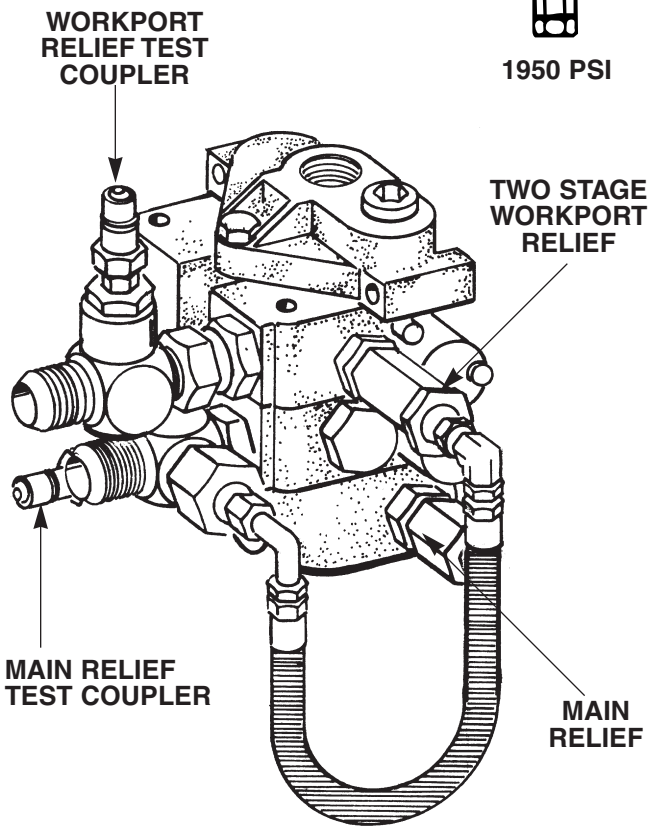
IF NOT:

10. Replace the two stage workport relief.





1950 PSI



CHECK RESISTANCE PRESSURE

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

1. Move pushout control lever to fully extend the pushout cylinder.

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

2. Connect a porta-power with a gauge to the workport relief test coupler.

3. Slowly pump the porta-power and read the gauge to see what pressure the two stage workport relief "cracks" open at. The pressure should be 1100 PSI (76 BAR).

IF NOT:

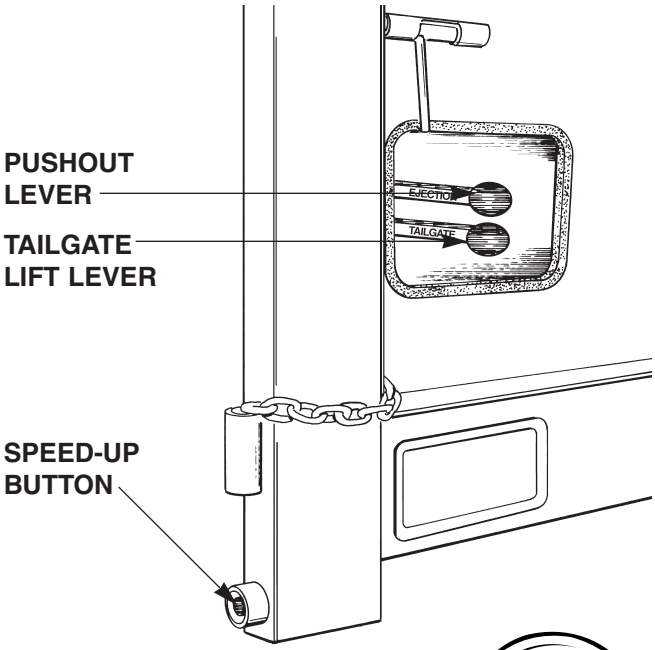
4. Verify all pressure in the signal line is relieved by moving the tailgate control lever forward to relieve any pressure in the circuit. Repeat step 3.

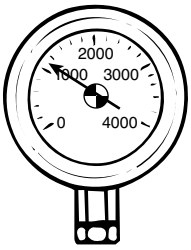
IF NOT:

5. Disconnect signal line at the two stage workport relief.

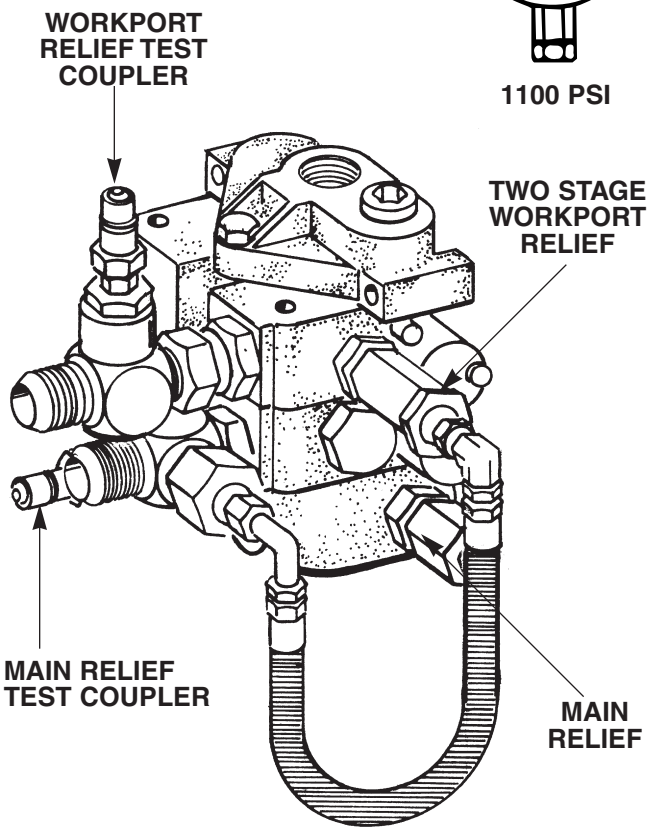
6. Loosen locknut and adjust the relief. If reading was below 1100 PSI (76 BAR), turn adjustment clockwise. If reading was over 1100 PSI (76 BAR), turn adjustment counter-clockwise.

7. Secure locknut, connect signal line and confirm resistance pressure reading.





1100 PSI



CHECK PACKER AND CARRIER PANEL SHIFTING PRESSURES

There are two methods to determine accurate pressure settings.

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Use an electronic pressure gauge that maintains and records maximum system pressures.

2. If an electronic gauge is unavailable and a mechanical gauge must be used, the following procedure is recommended:

   a. Install a 0-3000 PSI (0-207 BAR) pressure gauge at the quick disconnect coupler on the two spool directional valve at front of the unit. Check the main relief pressure as described in Section 7, “Check-Out”, of the Service Manual.

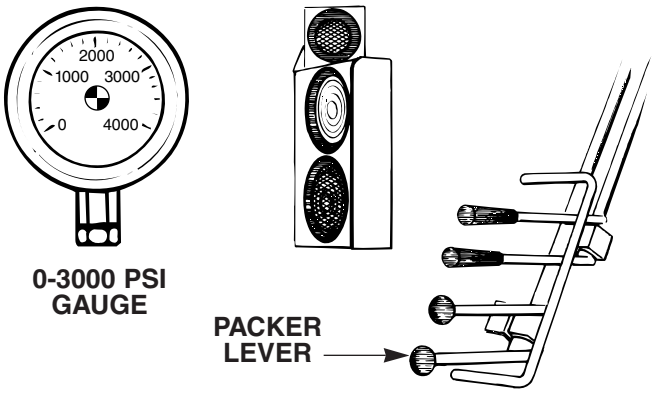
   b. Reduce the main relief setting to below the lowest knockout pressure.

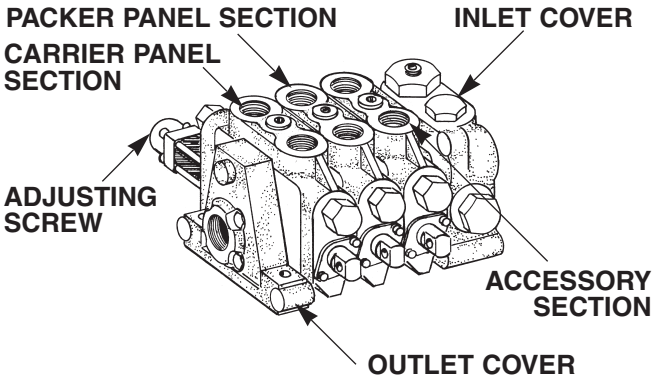
OPERATIONAL STATUS	
Truck Off	PTO Disengaged

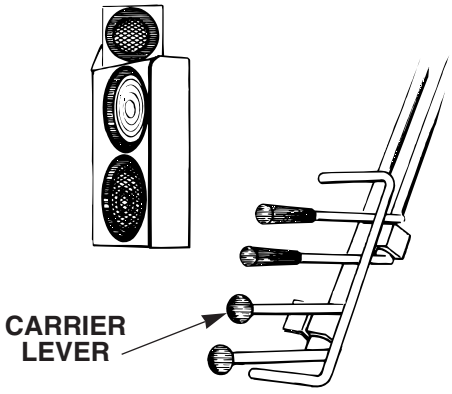
   c. Remove the button plug from the end of the Main Control Valve bonnet using a screwdriver, then shift the Main Control Valve linkage to the detented power position and release, leaving the valve spool in the detented position.

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

   d. While observing the pressure gauge, slowly increase the main relief valve setting. The pressure indicator will increase until the knockout pressure setting is reached and the Main Control Valve spool returns to neutral.







   e. The knockout pressures should be set at 2000 PSI (138 BAR) for the packer panel section and 2100 PSI (145 BAR) for the carrier panel section. If the knockout pressure setting requires adjustment, it may be changed by turning the knockout pressure adjustment screw, located inside the bonnet, clockwise to increase the knockout pressure setting or counter-clockwise to decrease the setting. Once the proper knockout setting has been attained, reinstall the button plug to seal the Main Control Valve.

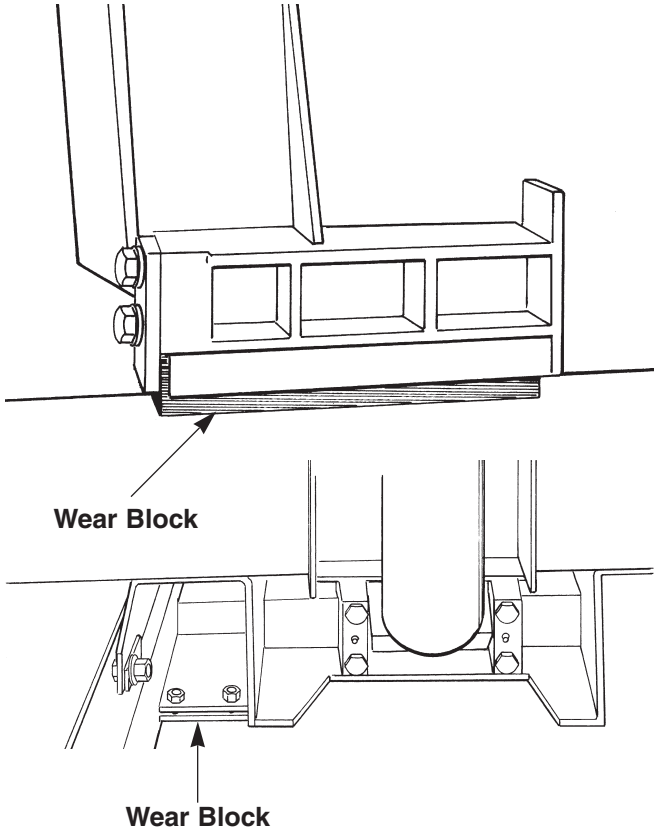
   f. Return the main relief valve pressure setting to its specified value as described previously.

CHECK WEAR BLOCKS

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Visually inspect all wear blocks for excessive wear. These items must be replaced before there is metal to metal contact.

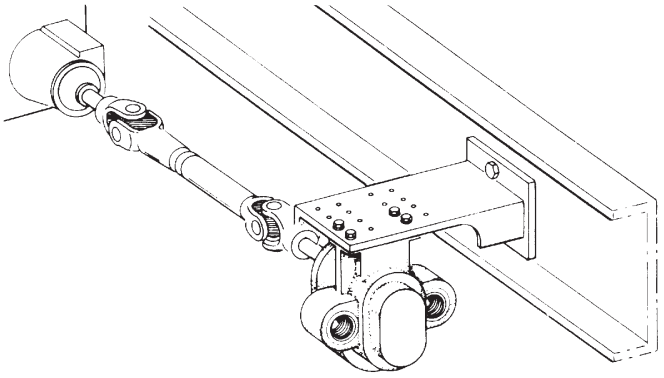
2. Shim or replace worn parts as described in Sec. 9, SERVICE AND REPAIR under PUSHOUT PANEL.



POWER TAKE OFF (P.T.O.)

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Periodically re-torque the mounting bolts or studs as outlined in the P.T.O. manufacturers service manual.

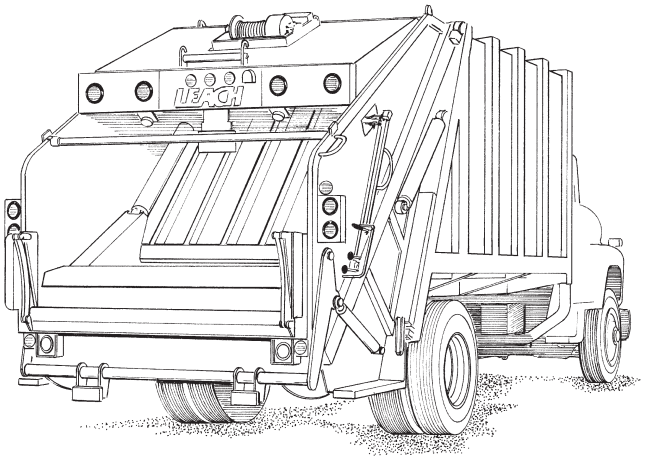


GENERAL

The Alpha, Beta and Delta have been designed to provide long periods of trouble-free operation. Performing the check-out procedures below, at regular weekly intervals, will help to prevent unscheduled downtime.

⚠WARNING

Make sure you know and observe all safety precautions listed in Sec. 2 before performing any of the following check-out procedures. Use extreme caution to avoid coming near any moving parts. Never enter the body of the unit when the truck is running. Make sure the unit is in the correct operational mode as indicated by the OPERATIONAL STATUS block presented at the beginning of each check.



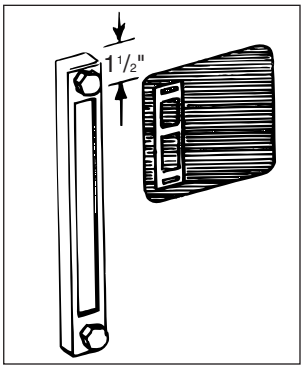
NOTE

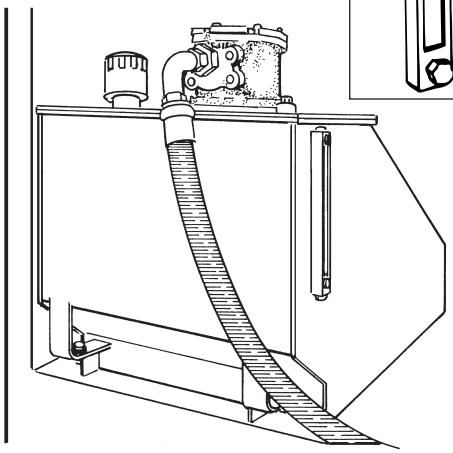
Because of the location of various controls, some checks will require two people.

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

CHECK HYDRAULIC TANK FLUID LEVEL

1. Make sure the tailgate is down and clamped securely.
2. Move the carrier and packer panel levers to position the carrier and packer cylinders in the retract position.
3. Pull the pushout lever to position the pushout cylinder in the retract position.
4. The fluid level should be between the safe range marks on the sight gauge.





IF NOT:

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

5. Add hydraulic fluid for normal operating and weather conditions. See Sec. 6, PREVENTIVE MAINTENANCE for additional information about servicing the hydraulic tank.

CHECK ENGINE SOLENOID SWITCH

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

IF ENGINE SPEEDS UP:

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

The system is grounded. Locate the short and repair as described under ELECTRICAL SYSTEM in Sec. 9, SERVICE AND REPAIR.

CHECK ENGINE SPEED-UP SWITCHES

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

1. Depress the engine speed-up pushbutton. The engine should speed up.

IF NOT:

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

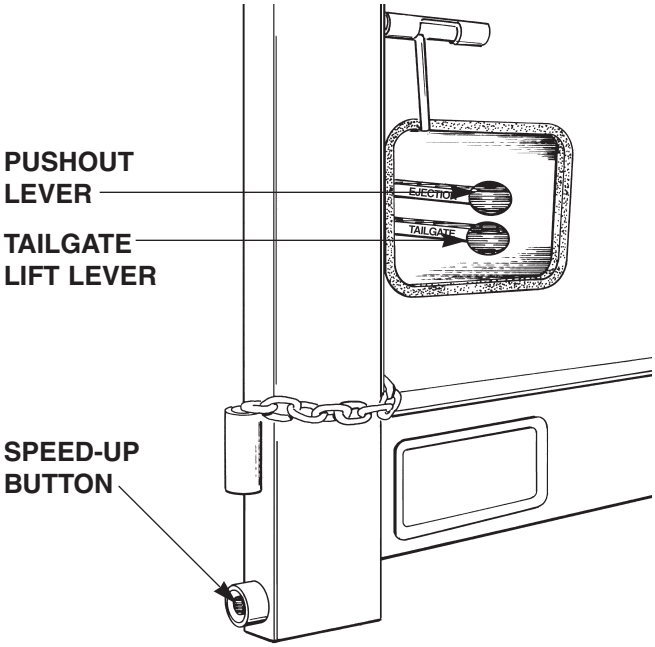
Locate the fault in the wiring or switch and repair. See Sec. 9, SERVICE AND REPAIR–ELECTRICAL SYSTEM.

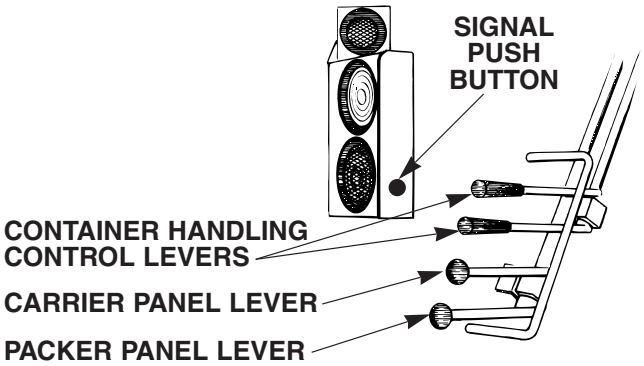
2. Activate carrier panel lever. Engine should speed up.

IF NOT:

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

Locate the fault in the wiring or switch and repair. See Sec. 9, SERVICE AND REPAIR–ELECTRICAL SYSTEM.





CHECK PACKING CYCLE TIME

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

1. Activate both the packer panel lever and carrier panel lever. Using a stopwatch, time a complete cycle. A complete cycle should take 23 to 26 seconds.

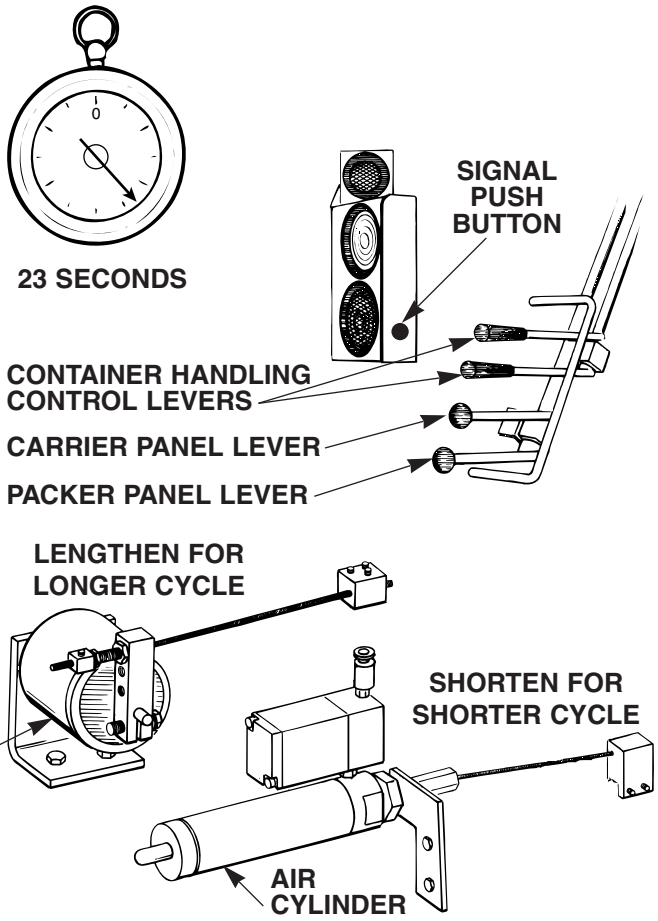
IF NOT:

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

2. Adjust the cable length between the solenoid or air cylinder and throttle linkage as needed to obtain the correct cycle time.

NOTE

It is important the the cycle time is correct before performing the following pressure checks.



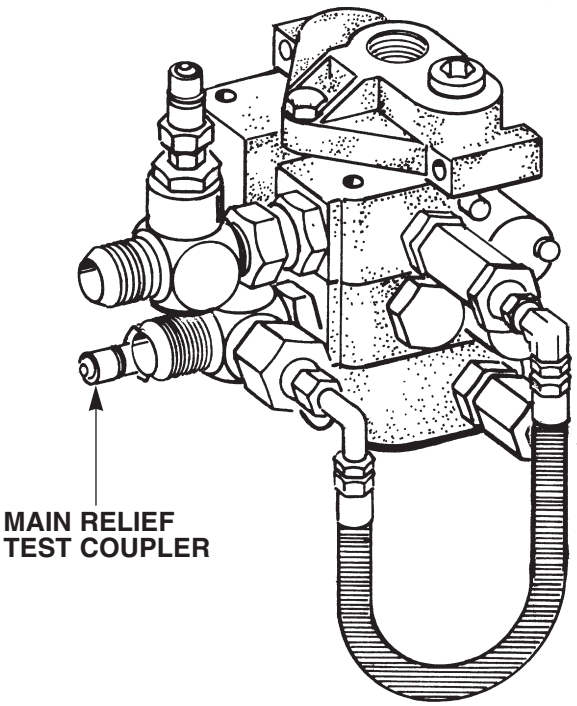
CHECK PRESSURES

The pressure checks provided below will indicate the operating condition of the hydraulic system. Detailed adjustment procedures are provided later in this section and are referenced at the appropriate check-out procedure. Prior to performing pressure checks:

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Install a gauge capable of reading at least 3000 PSI (207 BAR) on the main relief test coupling.

2. Start the unit, engage the PTO and turn solenoid switch ON.



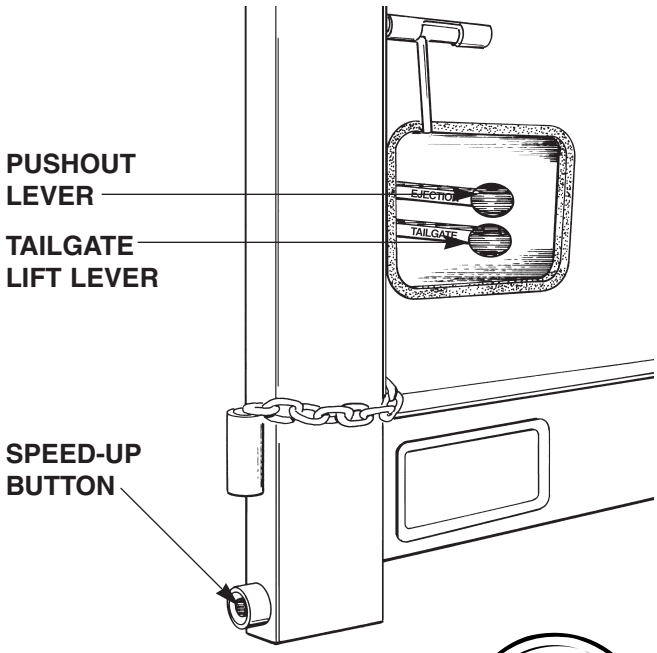
CHECK MAIN LINE PRESSURE

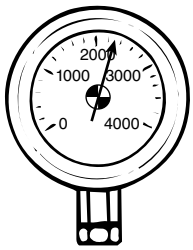
OPERATIONAL STATUS			
Truck Running	PTO Engaged	Sol. Sw.	On

1. Depress speed-up button.
2. Move pushout control lever to fully retract pushout cylinder.
3. Hold lever and read gauge. Pressure should be at least 2300 PSI (157 BAR) but no more than 2350 PSI (162 BAR).

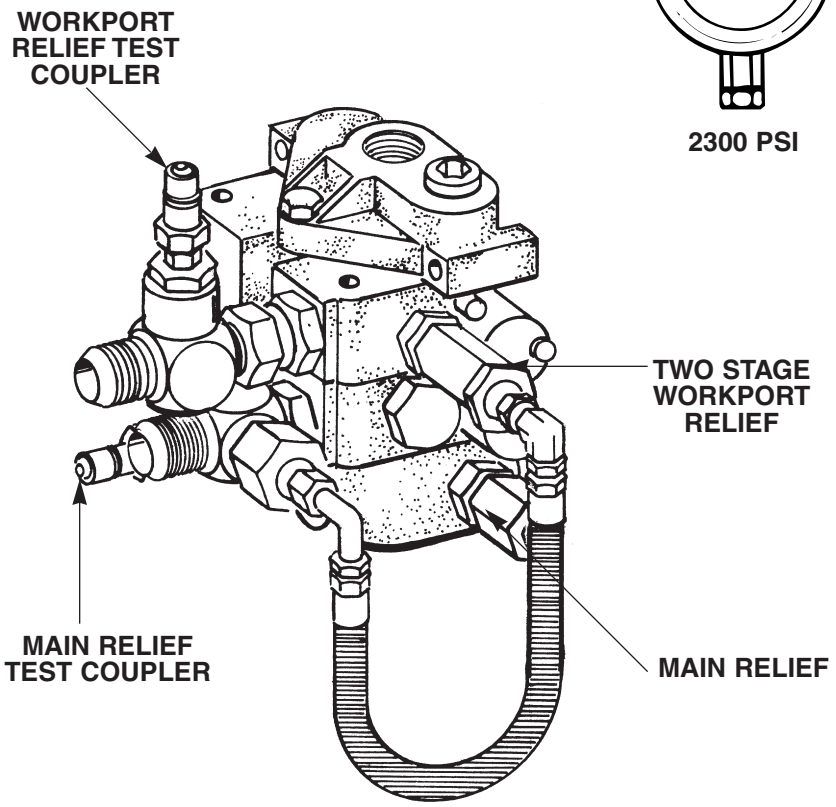
IF NOT:

4. Perform TEST FOR LEAKING Pushout CYLINDER SEAL as described in Section 9, SERVICE AND REPAIR. Start truck, repeat steps 2 and 3 and again check gauge for correct pressure.





2300 PSI



CHECK PUSHOUT PRESSURE

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Connect a gauge to the workport relief test coupler.
2. Start the unit, engage the PTO and turn the solenoid switch on.
3. Unlatch both tailgate clamps.
4. Depress speed-up button.
5. Move the tailgate control lever to the rear to fully raise the tailgate.

NOTE

The tailgate lowering time is 24 to 28 seconds.

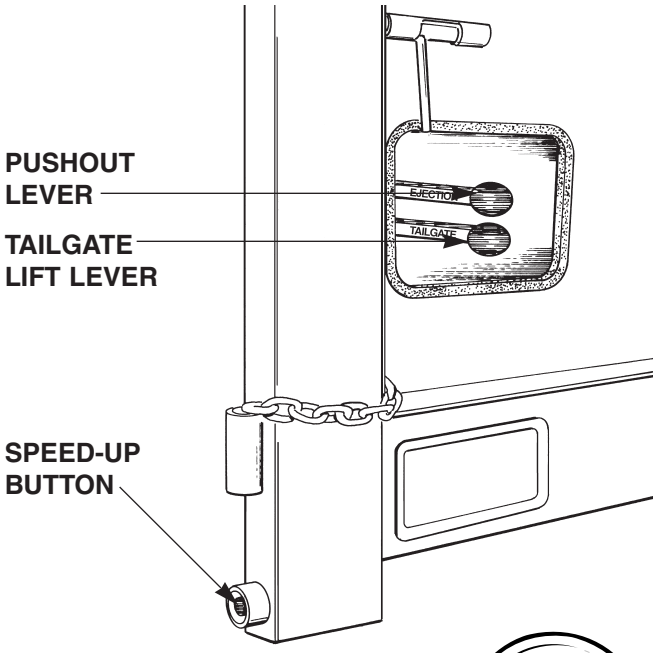
6. Move the pushout control lever to the rear to fully extend the pushout cylinder.
7. While continuing to hold the pushout control lever, observe the reading on the gauge.
8. The pressure should be at 1950 PSI (135 BAR) plus or minus 100 PSI (7 BAR).

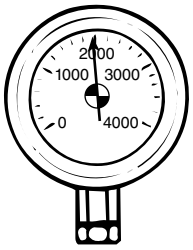
IF NOT:

9. Perform TEST FOR LEAKING Pushout CYLINDER SEAL as described in Section 9, SERVICE AND REPAIR. Start truck, repeat steps 2 and 3 and again check gauge for correct pressure.

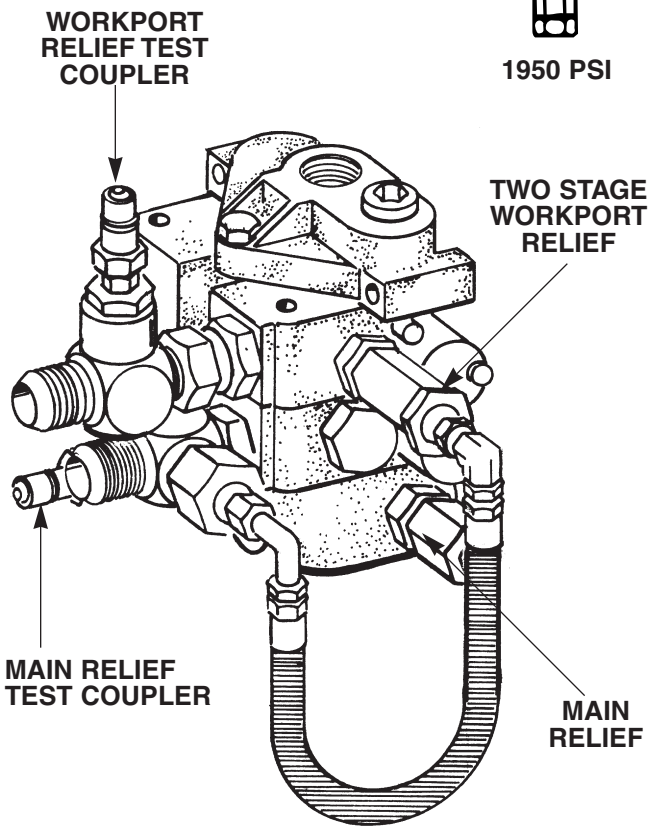
IF NOT:

10. Replace the two stage workport relief.





1950 PSI



CHECK RESISTANCE PRESSURE

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. On Sw.

1. Move pushout control lever to fully extend the pushout cylinder.

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

2. Connect a porta-power with a gauge to the workport relief test coupler.

3. Slowly pump the porta-power and read the gauge to see what pressure the two stage workport relief "cracks" open at. The pressure should be 300 PSI (21 BAR).

IF NOT:

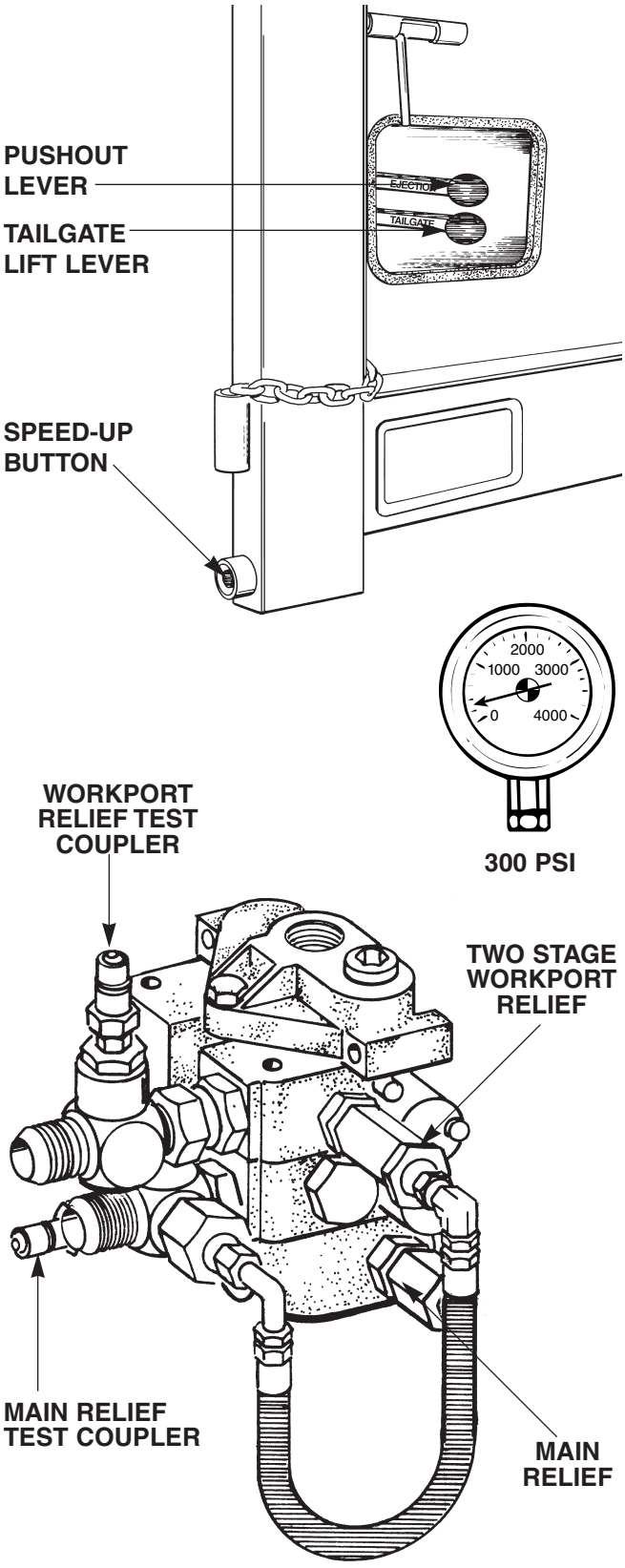
4. Verify all pressure in the signal line is relieved by moving the tailgate control lever forward to relieve any pressure in the circuit. Repeat step 3.

IF NOT:

5. Disconnect signal line at the two stage workport relief.

6. Loosen locknut and adjust the relief. If reading was below 300 PSI (21 BAR), turn adjustment clockwise. If reading was over 300 PSI (21 BAR), turn adjustment counter-clockwise.

7. Secure locknut, connect signal line and confirm resistance pressure reading.



CHECK PACKER AND CARRIER PANEL SHIFTING PRESSURES

There are two methods to determine accurate pressure settings.

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Use an electronic pressure gauge that maintains and records maximum system pressures.

2. If an electronic gauge is unavailable and a mechanical gauge must be used, the following procedure is recommended:

   a. Install a 0-3000 PSI (0-207 BAR) pressure gauge at the quick disconnect coupler on the two spool directional valve at front of the unit. Check the main relief pressure as described in Section 7, “Check-Out”, of the Service Manual.

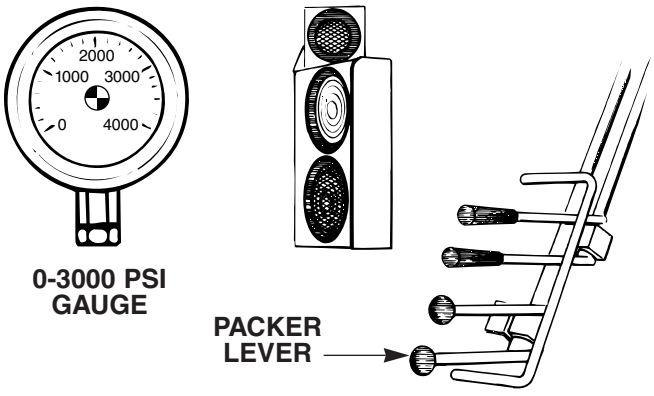
   b. Reduce the main relief setting to below the lowest knockout pressure.

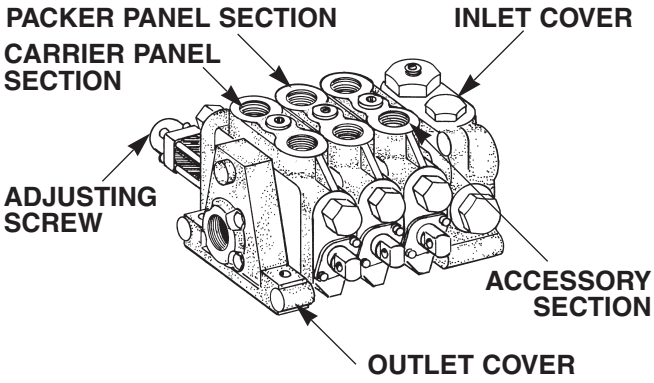
OPERATIONAL STATUS	
Truck Off	PTO Disengaged

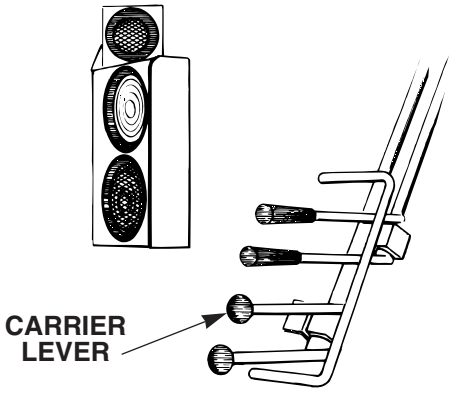
   c. Remove the button plug from the end of the Main Control Valve bonnet using a screwdriver, then shift the Main Control Valve linkage to the detented power position and release, leaving the valve spool in the detented position.

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

   d. While observing the pressure gauge, slowly increase the main relief valve setting. The pressure indicator will increase until the knockout pressure setting is reached and the Main Control Valve spool returns to neutral.







   e. The knockout pressures should be set at 1800 PSI (124 BAR) for the packer panel section and 2100 PSI (145 BAR) for the carrier panel section. If the knockout pressure setting requires adjustment, it may be changed by turning the knockout pressure adjustment screw, located inside the bonnet, clockwise to increase the knockout pressure setting or counter-clockwise to decrease the setting. Once the proper knockout setting has been attained, reinstall the button plug to seal the Main Control Valve.

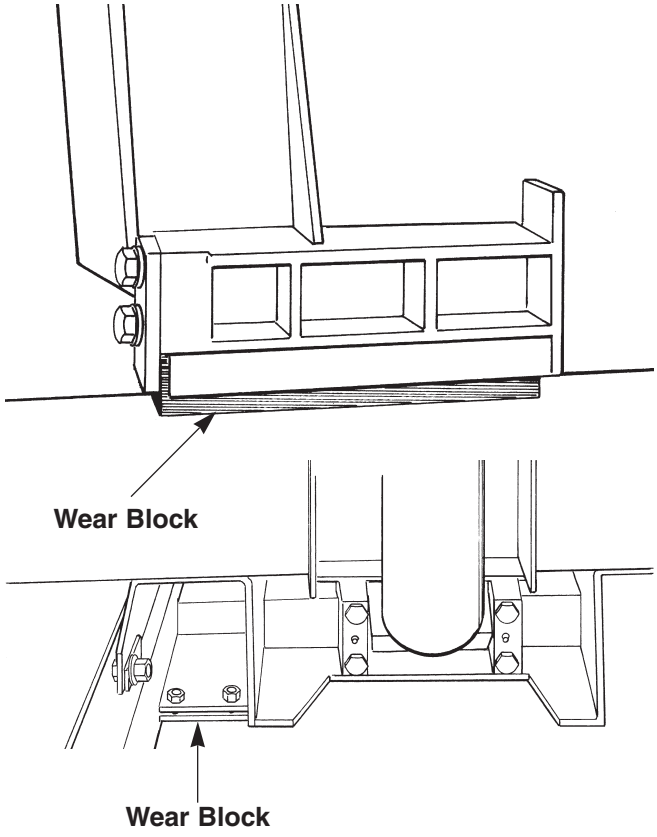
   f. Return the main relief valve pressure setting to its specified value as described previously.

CHECK WEAR BLOCKS

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Visually inspect all wear blocks for excessive wear. These items must be replaced before there is metal to metal contact.

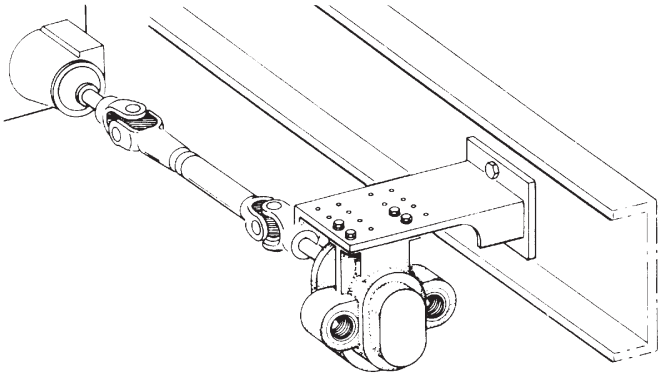
2. Shim or replace worn parts as described in Sec. 9, SERVICE AND REPAIR under PUSHOUT PANEL.



POWER TAKE OFF (P.T.O.)

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Periodically re-torque the mounting bolts or studs as outlined in the P.T.O. manufacturers service manual.



TROUBLESHOOTING

GENERAL

Troubleshooting is a matter of quickly and logically isolating the cause of a problem and taking corrective action. Factory trained mechanics, experienced operators, a thorough understanding of the information in this manual and accurate maintenance records are the best troubleshooting tools available. Occasionally it may be best for a service person, who is trying to isolate a problem, to go “on the route” or consult with operators to determine how the unit is acting under actual working conditions.

For the most part, problems with the unit will be limited to hydraulic and electrical system component malfunction or control linkage adjustment.

Hydraulic flow diagrams are provided in this section. These diagrams can be helpful in determining which parts are associated with a particular function. For example, the clamp cylinder is part of the load pushout function.

An electrical wiring diagram is included in Sec. 9, SERVICE AND REPAIR under ELECTRICAL SYSTEM.

Problems in the hydraulic system may be found by performing the PRESSURE CHECKS found in Sec. 7, CHECK-OUT PROCEDURES. Refer to Section 10 for telescopic troubleshooting.

COMPACTION

Before troubleshooting a unit, it is important to remember that the compaction may vary with the following conditions:

1. Type of refuse. Tree branches, dry leaves, furniture and any other items loaded into the body that take up relatively large amounts of space will reduce the compaction ratio.

2. Moisture content of refuse. Wet refuse will pack tighter than dry and consequently a wet load will weigh more than a dry load. Wet refuse loaded into the body will increase the compaction rate.

3. Operation of the equipment. As with the operation of any type of heavy equipment, one machine can yield different results with different operators. Operating a rear loader is a skill. Placement of items in the hopper, not over loading the hopper and releasing the pushout plate clamp at the right time are all learned skills that will affect the compaction rate of a unit.

4. Preventive maintenance. A properly maintained unit will achieve higher compaction rates than one that is poorly maintained. The condition of the hydraulic system, pump, main relief setting and the condition of the operating cylinder seals will all have an effect on unit performance and compaction. Some chassis components will also affect compaction. The engine speed during packing, fluid level in an automatic transmission and the condition of the clutch assembly in a standard transmission chassis may also affect compaction.

Compaction rates of a unit will depend on the season, the type of trash, the weather and the operation and maintenance of a unit. If the unit packs relatively consistent loads and has been properly maintained according the the Service manual, then it is safe to assume that it is getting maximum compaction for your particular conditions.

DIESELING IN HYDRAULIC SYSTEMS

Any hydraulic system should be a sealed environment free of foreign material including air. Unlike solid contamination, air is compressible and contains oxygen. It is these two (2) properties of air contamination that provide the elements needed to support the phenomenon known as dieseling. Dieseling can only occur when the elements of fuel, oxygen and heat are all present at the same time. In the hydraulic system the hydraulic fluid is the fuel. The presence of air provides not only the oxygen to support combustion, but also the means for generating sufficient heat to ignite the fuel/air mixture. When air is rapidly compressed, heat is generated. A rapid pressure change of only 600 psi may be enough to generate the heat required to ignite the fluid and air mixture. The oxygen in the heated compressed air and the hydraulic fluid ignite resulting in dieseling. The ignitions that result from dieseling in the hydraulic system are small in size and many may be needed to eventually damage a piston seal to the extent that bypass will occur.

"Where does the air come from?" The answer is that the air comes out of the fluid itself. Hydraulic fluid can contain 10% air by volume. As the pressure on the fluid increases, the amount of air that can be absorbed also increases.

Now we know that the air is most likely present in the fluid, but the next question is, "How does the air get out of the fluid?" The air, while it is in suspension, will pose no problem to the operation of the hydraulic system. But once it is separated into bubbles then all the factors are present to support combustion. The air in suspension can be separated when the fluid is subjected to a negative pressure (vacuum) of as little as 3.5 psi. This can occur when the fluid is squeezed through a restriction or an orifice. The resulting pressure decrease can be sufficient to allow trapped air to separate from the fluid. A good example may be a front mounted pump dry valve system. In the dry mode of operation, system hydraulic fluid is drawn through a small orifice. This provides lubrication and cooling for the pump, but also provides a perfect situation for air separation. In addition, the flow regulator bypass at the pump output is returned back to the pump input, this recirculates the fluid/air and allows for the separation of even more air.

In cases where the seals in 2RII packer cylinders appear to be burnt or melted, consider the possibility of air ingestion. The following suggestions may help in eliminating this problem:

1. Ensure that the pump suction connections are tight. It is possible for a suction hose connection to allow air in without leaking any fluid out.

2. The pump shaft seal can allow air into the system. Replace if the seal is suspect.

3. Check for air ingestion around the packings on the gate valve stem. Tighten the packing nut if suspect.

4. Excessive system flow rate (cycle time too fast) can agitate the hydraulic fluid. Set the cycle time according to specifications.

5. Do not thin hydraulic fluid with diesel fuel (lowers the flash point). Weather permitting, use a higher flash point fluid.

After making any repairs on the hydraulic system, bleed the system at reduced engine speed and pressure to remove any trapped air. Depending on the size of the component, e.g. cylinder, hose, it may be necessary to cycle the unit several times. Of course the larger the air pocket, the more cycles are needed. To avoid potential problems, thoroughly bleed all hydraulic systems and ensure that all inlet connections are tight and not ingesting air.

TROUBLESHOOTING

OPERATION IS ERRATIC

POSSIBLE CAUSE	REMEDY
1. Solenoid receiving erratic electrical current.	1. Check electrical system. See Sec. 9, Service and Repair.
2. Solenoid flexing at mounting point.	2. Make sure solenoid is mounted firmly and mounting does not flex.
3. Engine motor mounts defective.	3. Repair or replace as required.
4. Hydraulic fluid too hot.	4. Check for proper grade of fluid. See Sec. 6, Preventive Maintenance.
5. Hydraulic fluid level too low.	5. Check fluid level. Add fluid if necessary.
6. Bypass in cylinders.	6. Test for leaking cylinders. See Sec. 9, Service and Repair.
7. Hydraulic fluid too cold.	7a. Bring fluid to operating temperature. 7b. Check for proper grade of hydraulic fluid. See Sec. 5, Specifications.
8. Operating linkage bent or binding.	8. Repair, replace or realign damaged linkage.

PUMP NOISE IS EXCESSIVE

NOTE: ALL PUMPS MAKE A CERTAIN AMOUNT OF NOISE.

POSSIBLE CAUSE	REMEDY
1. Pump starving for fluid.	1a. Open gate valve. 1b. Check fluid level. 1c. Check hydraulic fluid filter and tank. 1d. Check for obstruction in suction lines, hoses kinked or collapsed.
2. Hydraulic fluid too cold.	2a. Bring fluid to normal operating temperature. 2b. Change hydraulic fluid to proper grade for operating conditions. See Sec. 5, Specifications.
3. PTO driveshaft and/or u-joints badly worn or out of balance.	3. Repair, replace and/or balance all parts.
4. Pump gears, end plates, bearings, etc. badly worn.	4. Replace pump.
5. Improper grade of hydraulic fluid (fluid foaming).	5. Replace with proper grade of hydraulic fluid. See Section 5, Specifications.
6. Air entering the system.	6a. Tighten the suction hose. 6b. Tighten packing on the gate valve stem. 6c. Replace the pump shaft seal. 6d. Replace the suction hose. 6e. Replace the o-rings on the pump. 6f. Tighten or repair any leaks in the hydraulic system.

TROUBLESHOOTING

ENGINE WILL NOT SPEED UP WHEN CARRIER PANEL LEVER OR SPEED-UP BUTTON IS ENGAGED

POSSIBLE CAUSE	REMEDY
1. Short in electrical wiring.	1. Repair broken wire. See Electrical System, Sec. 9, Service and Repair.
2. Blown fuse on speed-up relay.	2. Replace fuse and check electrical system for shorts. See Electrical System, Sec. 9, Service and Repair.
3. Relay, solenoid or switch is defective.	3. Check for and replace defective parts as described in the Electrical System Section. See Sec. 9, Service and Repair.
4. Solenoid-to-carburetor or governor cable is broken.	4. Replace cable.
5. Electrical system not grounded properly.	5. Check all ground connections for corrosion or breaks. Clean or repair as described in the Electrical System Section. See Sec. 9, Service and Repair.
6. Carrier panel lever speed-up switch or linkage defective.	6. Repair, replace or adjust as required.
7. Solenoid mounting loose, broken or incorrect.	7. Be sure solenoid mounting is correct and secure.
8. Truck engine mounts loose, worn, broken or missing.	8. Repair or replace engine mounts as required.

ENGINE SPEED WILL NOT RETURN TO NORMAL WHEN PACKING CYCLE IS COMPLETED OR SPEED-UP BUTTON IS RELEASED

POSSIBLE CAUSE	REMEDY
1. Short circuit in electrical system.	1. Check for and repair short in system as described in Electrical Section. See Sec. 9, Service and Repair.
2. Carrier panel lever speed-up switch is defective.	2. Repair, replace or adjust as required.
3. Solenoid mounting loose, broken or incorrect.	3. Be sure solenoid mounting is correct and secure.
4. Truck engine mounts loose, worn, broken or missing.	4. Repair or replace engine mounts as required.

PACKER PANEL VALVE SECTION SHIFTS TOO SOON

POSSIBLE CAUSE	REMEDY
1. Object in hopper that the packer panel cannot move.	1. Recycle unit. Rearrange or remove refuse if necessary.
2. Cycle time too fast.	2. Adjust speed-up cable length.
3. Packer panel valve section pressure too low.	3. Perform pressure checks as described in Sec. 7, Check-out.

TROUBLESHOOTING

CARRIER PANEL VALVE SECTION SHIFTS TO NEUTRAL TOO SOON

POSSIBLE CAUSE	REMEDY
1. Carrier panel valve section pressure too low.	1. Perform pressure check as described in Sec. 7, Check-out.

PACKER PANEL VALVE SECTION WILL NOT SHIFT

POSSIBLE CAUSE	REMEDY
1. Packer panel cylinder seal leaking.	1. Perform test for leaking cylinder. See Sec. 9, Service and Repair.
2. Packer panel valve section pressure too high.	2. Perform pressure check as described in Sec. 7, Check-out.
3. Linkage binding or restrictive.	3. Inspect and free linkage as necessary.

CARRIER PANEL VALVE SECTION WILL NOT SHIFT TO NEUTRAL

POSSIBLE CAUSE	REMEDY
1. Carrier cylinder seal leaking.	1. Perform test for leaking cylinder. See Sec. 9, Service and Repair.
2. Pressure too high.	2. Perform pressure check as described in Sec. 7, Check-out.
3. Linkage binding or restrictive.	3. Inspect and free linkage as necessary.

PACKER PANEL DOES NOT DELIVER FULL FORCE TO PACK LOAD INTO BODY

POSSIBLE CAUSE	REMEDY
1. Hydraulic pressure incorrect.	1. Perform checkout procedures through pressure checks. See Sec. 7, Check-out.
2. Hydraulic fluid in tank is low.	2. Add fluid to correct level. See Sec. 6, Preventive Maintenance.
3. Tank strainer screen is dirty (this condition will starve pump and cause noise in the system).	3. Service system as described in Sec. 6, Preventive Maintenance.
4. Wrong type of hydraulic fluid in system.	4. Drain and refill with correct type of hydraulic fluid. See Sec. 5, Specifications.
5. Main relief section of 2-spool directional valve opens too soon.	5. Adjust main relief setting on 2-spool valve. See Sec. 9, Service and Repair.
6. Hydraulic pump is defective and will not deliver full pressure.	6. Replace pump. See Sec. 9, Service and Repair.
7. Operating cylinder piston seal is leaking.	7. Perform test for leaking cylinder. See Sec. 9, Service and Repair.
8. Operating valve pressures are too low.	8. Perform pressure checks. See Sec. 7, Check-out.
9. Air in hydraulic lines.	9. Cycle packer 6 or 7 times to bleed air out of system.

TROUBLESHOOTING

LOUD SQUEALING NOISE WHEN MANUALLY RETRACTING PUSHOUT CYLINDER

POSSIBLE CAUSE	REMEDY
1. Excessive fluid flow being forced through the main relief in the 2-spool valve.	1a. Release speed-up button. 1b. Only partially pull (feather) the 2-spool valve control handle.

LOAD WILL NOT PUSH OUT

POSSIBLE CAUSE	REMEDY
1. Less than full pressure in pushout cylinder.	1a. Perform test for leaking cylinder and repair. 1b. Adjust main relief pressure. See Sec. 9, Service and Repair.
2. The operator is trying to push the load out against a pile of refuse, dirt or bank of a hill.	2. Move the unit forward to finish unloading.

PUSHOUT PANEL SLIDES FORWARD TOO FAST WHILE PACKING REFUSE

POSSIBLE CAUSE	REMEDY
1. Cylinder bypassing. 2. Resistance setting too low.	1. Perform test for leaking cylinder. 2. Adjust resistance setting.

PUSHOUT PANEL WILL NOT SLIDE FORWARD AUTOMATICALLY

POSSIBLE CAUSE	REMEDY
1. Resistance setting too high. 2. Packer panel not applying full force to move pushout panel forward.	1. Reduce resistance setting. 2a. Check pressures. 2b. Check pump.

CARRIER AND PACKER PANEL STOP SHORT OF HOME POSITION AFTER EACH CYCLE

POSSIBLE CAUSE	REMEDY
1. Unit full 2. Resistance too high. 3. Packer panel does not deliver full force.	1. Empty unit. 2. Reduce resistance setting. 3. See Section 8, Troubleshooting.

TROUBLESHOOTING

PUSHOUT CYLINDER WILL NOT EXTEND TO PUSH OUT LOAD

POSSIBLE CAUSE	REMEDY
1. Operator trying to push load out against pile of refuse, dirt or bank of hill.	1. Unload unit as described in Sec. 3, Operation.
2. Leaking piston seal in pushout cylinder.	2. Perform test for leaking cylinder and repair as required. See Sec. 9, Service and Repair.
3. Hydraulic tubing is damaged (pinched shut).	3. Replace tubing.
4. Main relief pressure too low.	4. Check pressure. See Sec. 7, Check-out.

PACKER PANEL DRIFTS OPEN WHILE PACKING LOAD INTO BODY

POSSIBLE CAUSE	REMEDY
1. Packer panel cylinder seal leaking.	1. Perform test for leaking cylinder. See Sec. 9, Service and Repair.
2. Packer panel valve section pressure too high.	2. Perform pressure test as described in Sec. 7, Check-out.

CYCLE TIME TOO SLOW

POSSIBLE CAUSE	REMEDY
1. Solenoid to carburetor or governor linkage cable out of adjustment.	1. Adjust cable to achieve 32 seconds cycle time.
2. Hydraulic fluid level too low.	2. Fill to proper level. See Sec. 6, Preventive Maintenance.
3. Hydraulic fluid filter needs servicing.	3. Service filter. See Sec. 6, Preventive Maintenance.
4. Hydraulic tank breather dirty.	4. Service breather. See Sec. 6, Preventive Maintenance.
5. Hydraulic pump worn or defective.	5. Replace pump. See Sec. 9, Service and Repair.
6. Operating cylinder piston seals leaking.	6. Perform test for leaking operating cylinder seals and repair as required.
7. Incorrect grade of hydraulic fluid for current operating conditions.	7. Refill with proper grade of hydraulic fluid. See Sec. 5, Specifications.
8. Solenoid mounting loose or broken.	8. Remount solenoid securely (on engine, if possible).
9. Solenoid or wiring defective.	9. Repair or replace as required. See Electrical System, Sec. 9, Service and Repair.
10. Defective governor (diesel engine).	10. Diesel engine must have a full variable speed governor to properly operate packer.

TROUBLESHOOTING

TAILGATE WILL NOT RAISE

POSSIBLE CAUSE	REMEDY
1. Tailgate clamps still engaged.	1. Disconnect clamps and swing free of tailgate.
2. Insufficient hydraulic pressure.	2. Check main pressure. See Sec. 7, Check-out.
3. Hydraulic pump is defective.	3. Replace pump. See Sec. 9, Service and Repair.
4. Relief section of 2-spool directional valve out of adjustment or broken.	4. Adjust or replace relief as necessary. See Sec. 9, Service and Repair.
5. Tailgate lift cylinders leaking or defective.	5. Repair or replace as required.
6. Restriction in tailgate cylinder hose.	6. Remove and clean hose.

CONTAINER WON'T LIFT

POSSIBLE CAUSE	REMEDY
1. Insufficient hydraulic pressure.	1. Check hydraulic pressure following procedures in service manual.
2. Cable broken.	2. Replace cable.
3. Cable loose from the lifting device (drum/cylinder).	3. Secure cable to lifting device.
4. Container overload.	4. Reduce weight of material in container.
5. Container frozen to the ground.	5. Do not use lifting device to break container loose from the ground.
6. Control linkage is not moving the directional valve.	6. Repair the linkage.
7. Lifting motor or cylinder(s) by-passing hydraulic fluid.	7. Repair or replace the defective component.
8. Shear pin or key broken between winch shaft and drum.	8. Replace the key or pin.

WINCH MOTOR LEAKING

POSSIBLE CAUSE	REMEDY
1. Shaft seal damaged.	1. Replace shaft seal.
2. Motor worn internally.	2. Replace motor.

CONTAINER RAISES VERY SLOWLY

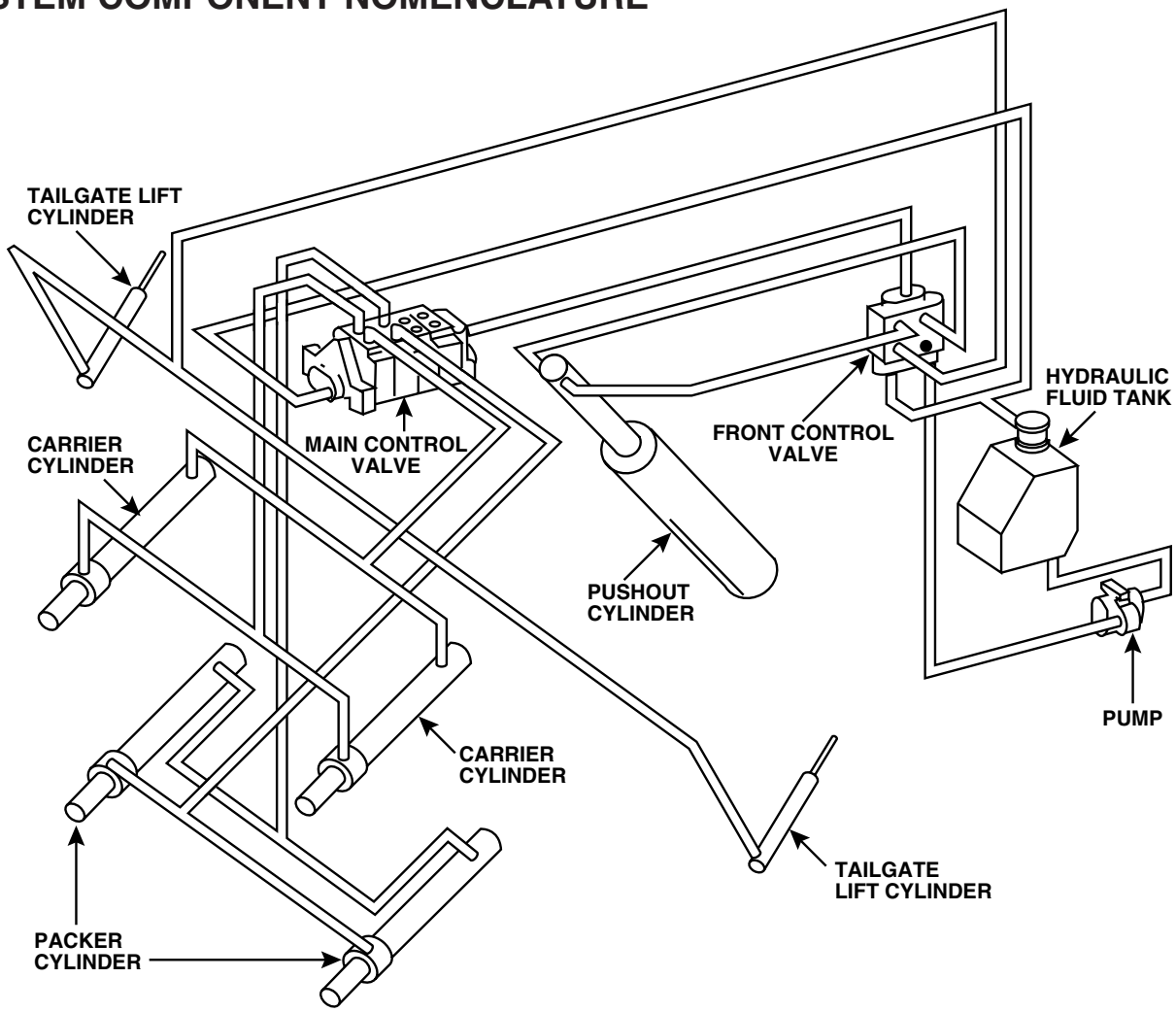
POSSIBLE CAUSE	REMEDY
1. Winch motor by-passing.	1. Repair or replace motor.
2. Rear loader hydraulic system not providing sufficient flow rate or pressure for container handling systems.	2. Check and repair rear loader hydraulic system following procedures in service manual.

DESCRIPTION OF HYDRAULIC SYSTEM

The following is a description with flow diagrams of what happens in the hydraulic system during the loading, packing and unloading operations of the unit.

Operator action is presented and then a description of the hydraulic flow and the interaction of system components (i.e., valves and cylinders) follows. Before proceeding to the flow diagram, refer to the illustration and become familiar with the system component nomenclature.

SYSTEM COMPONENT NOMENCLATURE

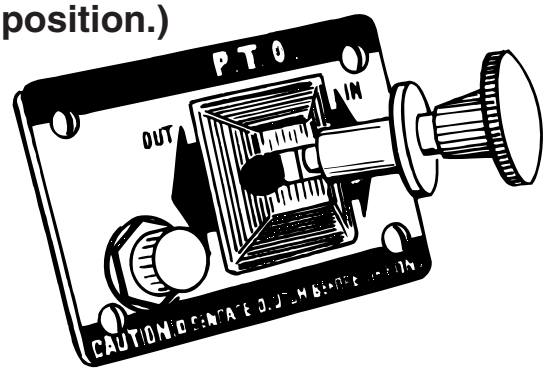


TROUBLESHOOTING

NEUTRAL (with the packer panel in “home” position.)

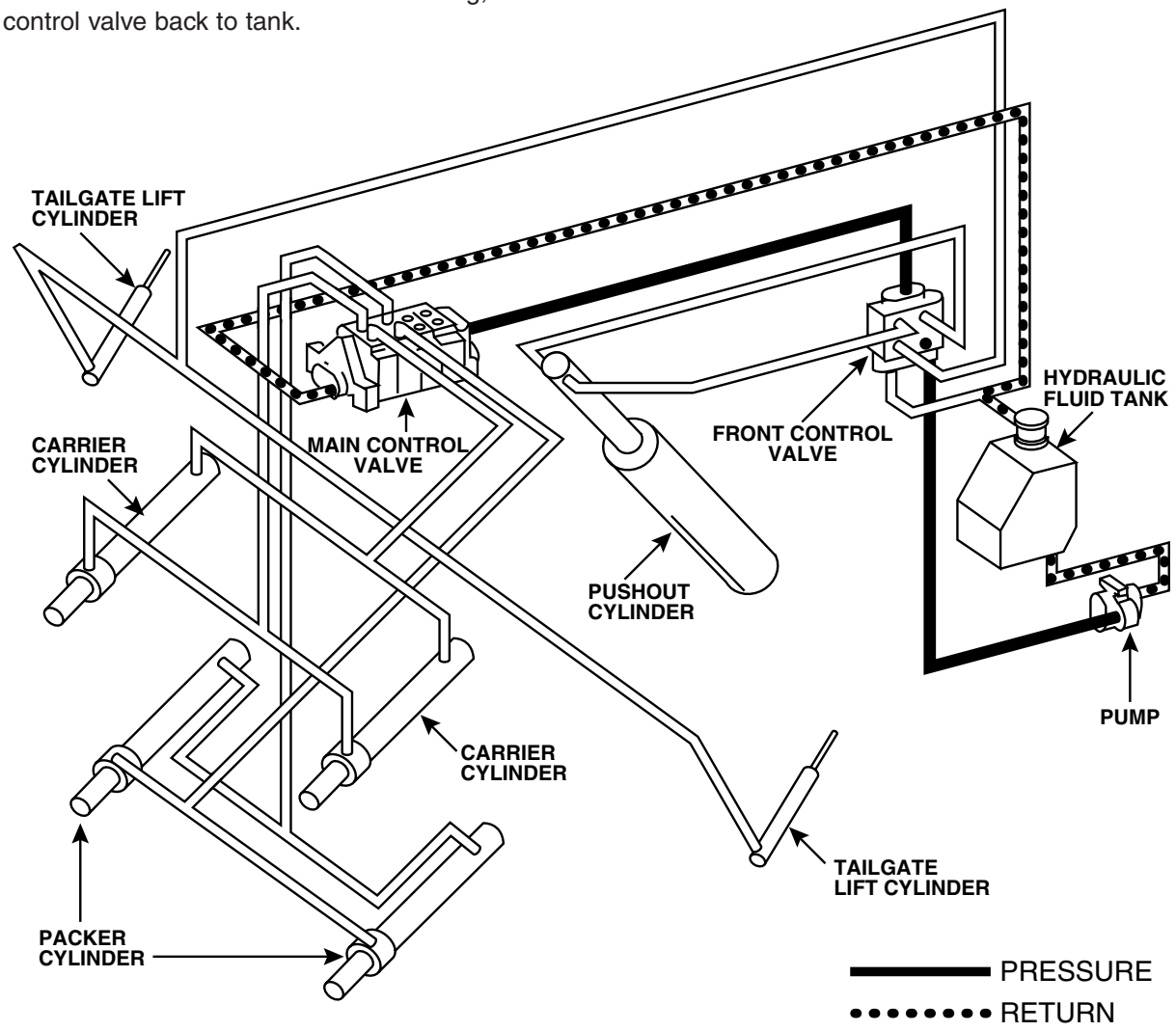
OPERATOR ACTION

Operator starts the truck and engages the PTO and speed up system.



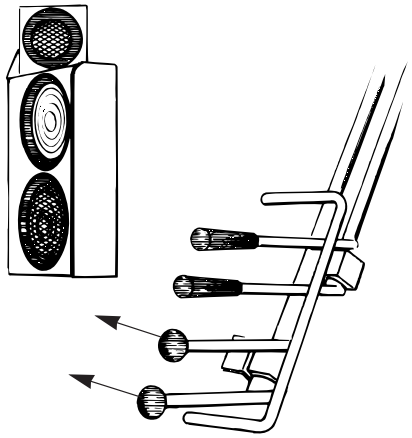
HYDRAULIC SEQUENCE

Hydraulic fluid flows from the tank, by gravity, to the pump; from there, it is pumped to the front control valve. Flow continues through the valve to and through the operating valve and then back to the tank. During packer operation, if pressure increases to the main relief setting, excess flow will be diverted from the front control valve back to tank.



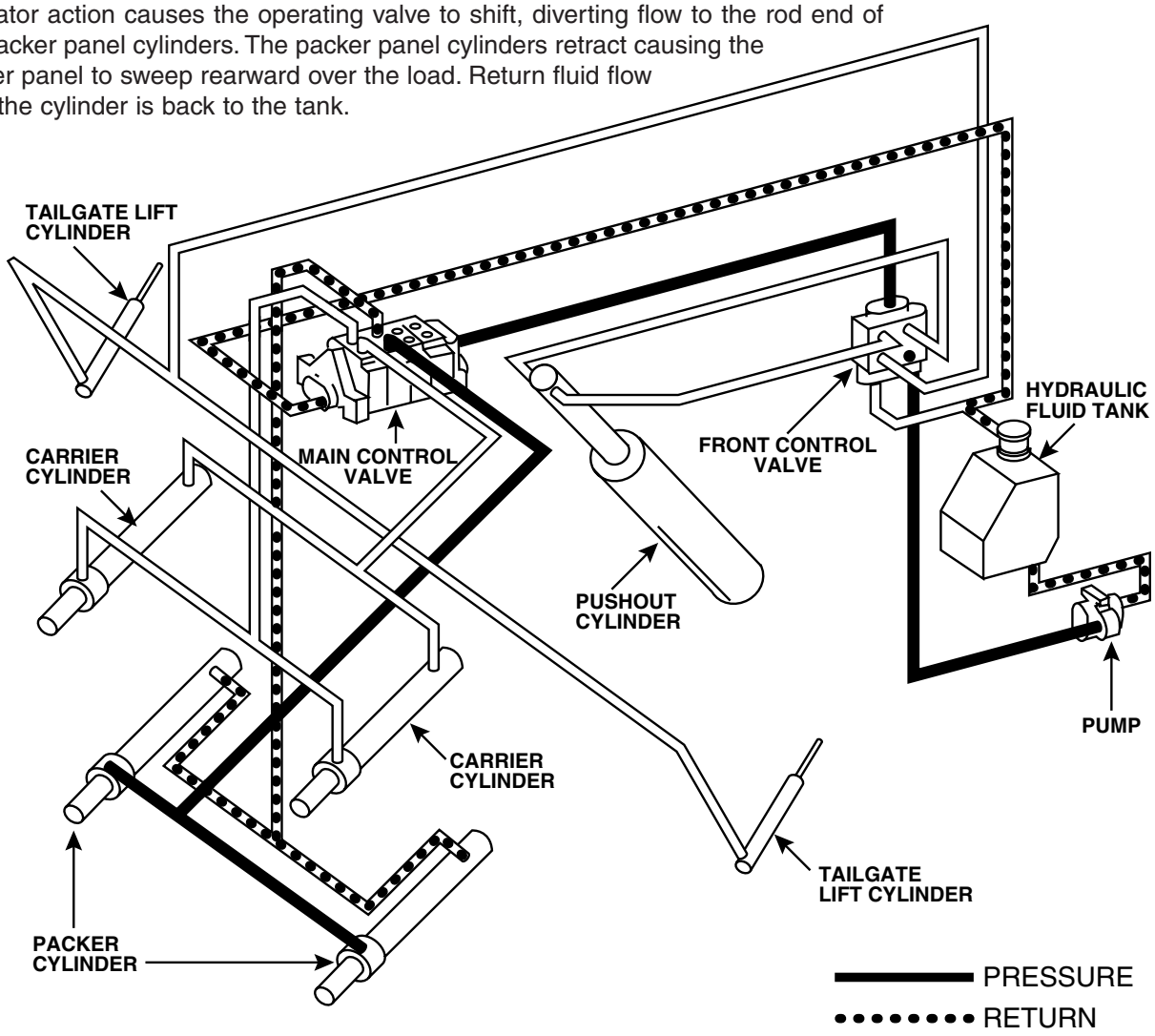
PACKER PANEL SWEEPS BACK OVER LOAD OPERATOR ACTION

The operator moves the control levers inward to start the compaction cycle.



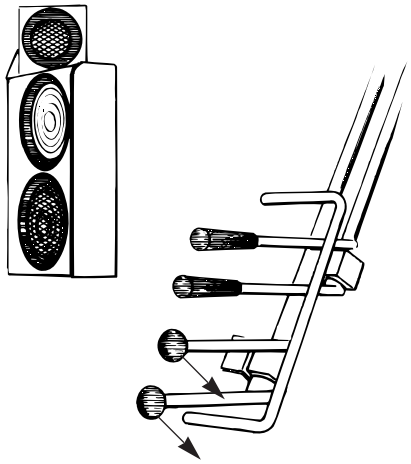
HYDRAULIC SEQUENCE

Operator action causes the operating valve to shift, diverting flow to the rod end of the packer panel cylinders. The packer panel cylinders retract causing the packer panel to sweep rearward over the load. Return fluid flow from the cylinder is back to the tank.



TROUBLESHOOTING

CARRIER & PACKER PANELS MOVE DOWN TO "INTERRUPTED CYCLE" POSITION

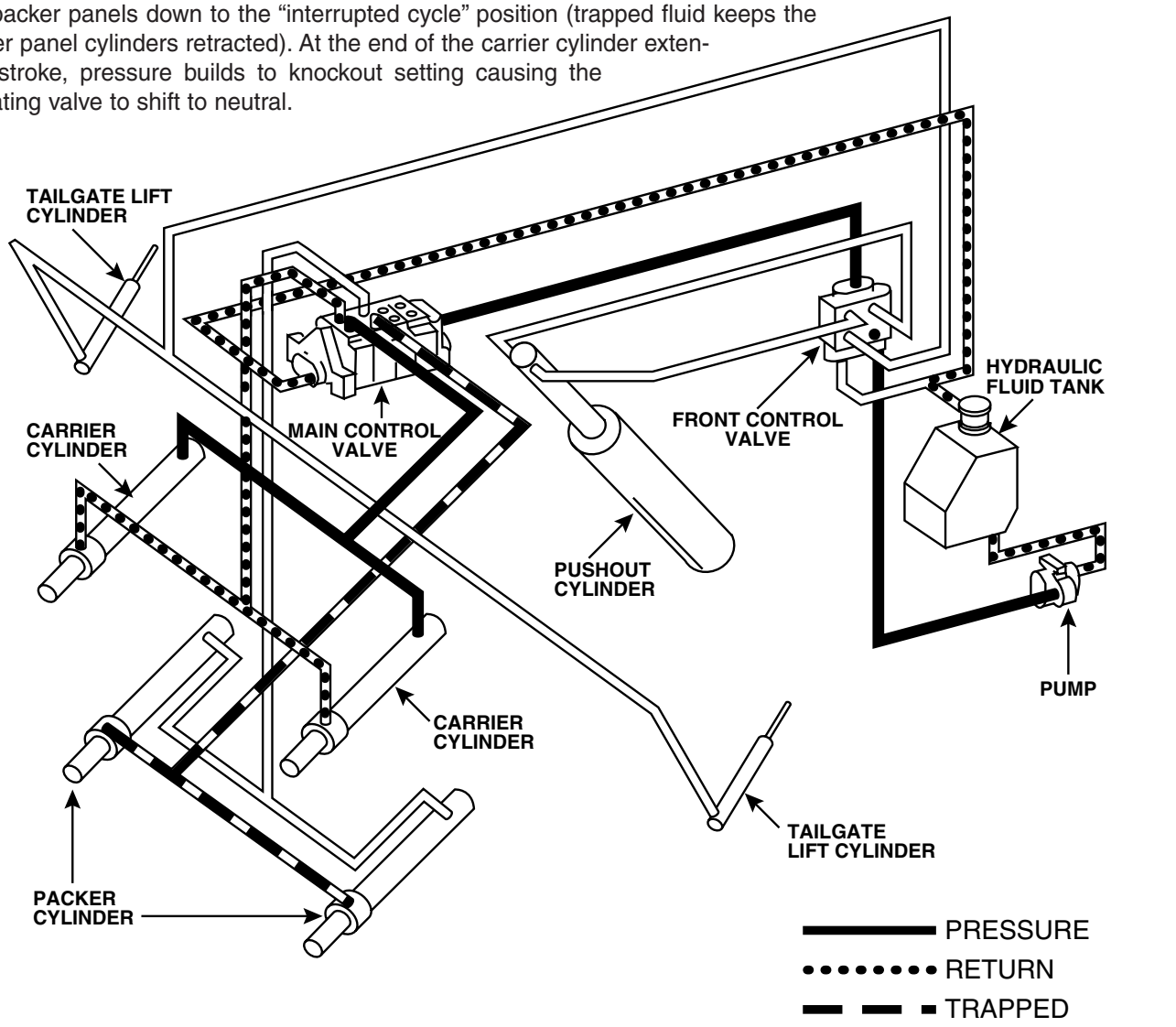


OPERATOR ACTION

None-Operating valve shifts automatically.

HYDRAULIC SEQUENCE

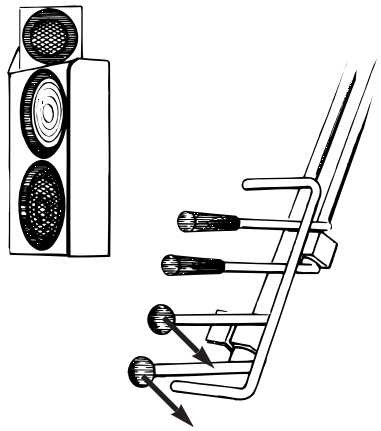
At the end of the packer panel cylinder stroke pressure builds to knockout setting causing the operating valve to shift, diverting flow to the case end of the carrier cylinders. The cylinders extend, moving the carrier and packer panels down to the "interrupted cycle" position (trapped fluid keeps the packer panel cylinders retracted). At the end of the carrier cylinder extension stroke, pressure builds to knockout setting causing the operating valve to shift to neutral.



PACKER PLATE SWEEPS HOPPER

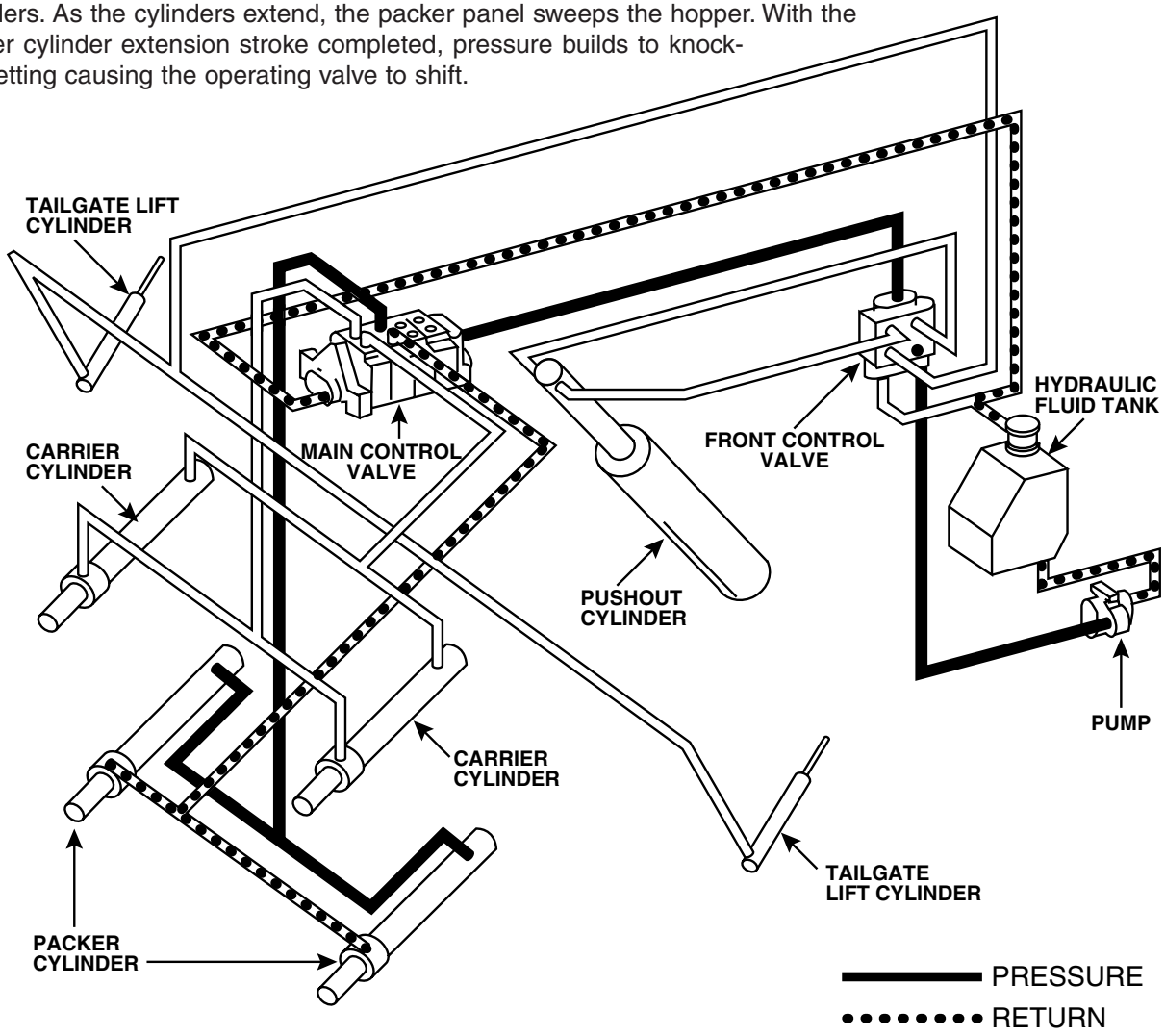
OPERATOR ACTION

Operator shifts the control levers outward to start compaction.



HYDRAULIC SEQUENCE

Fluid flow is through the operating valve packer section to the case end of the packer panel cylinders. As the cylinders extend, the packer panel sweeps the hopper. With the packer cylinder extension stroke completed, pressure builds to knock-out setting causing the operating valve to shift.

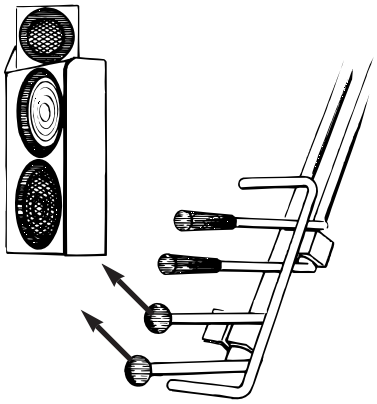


TROUBLESHOOTING

PACKING REFUSE

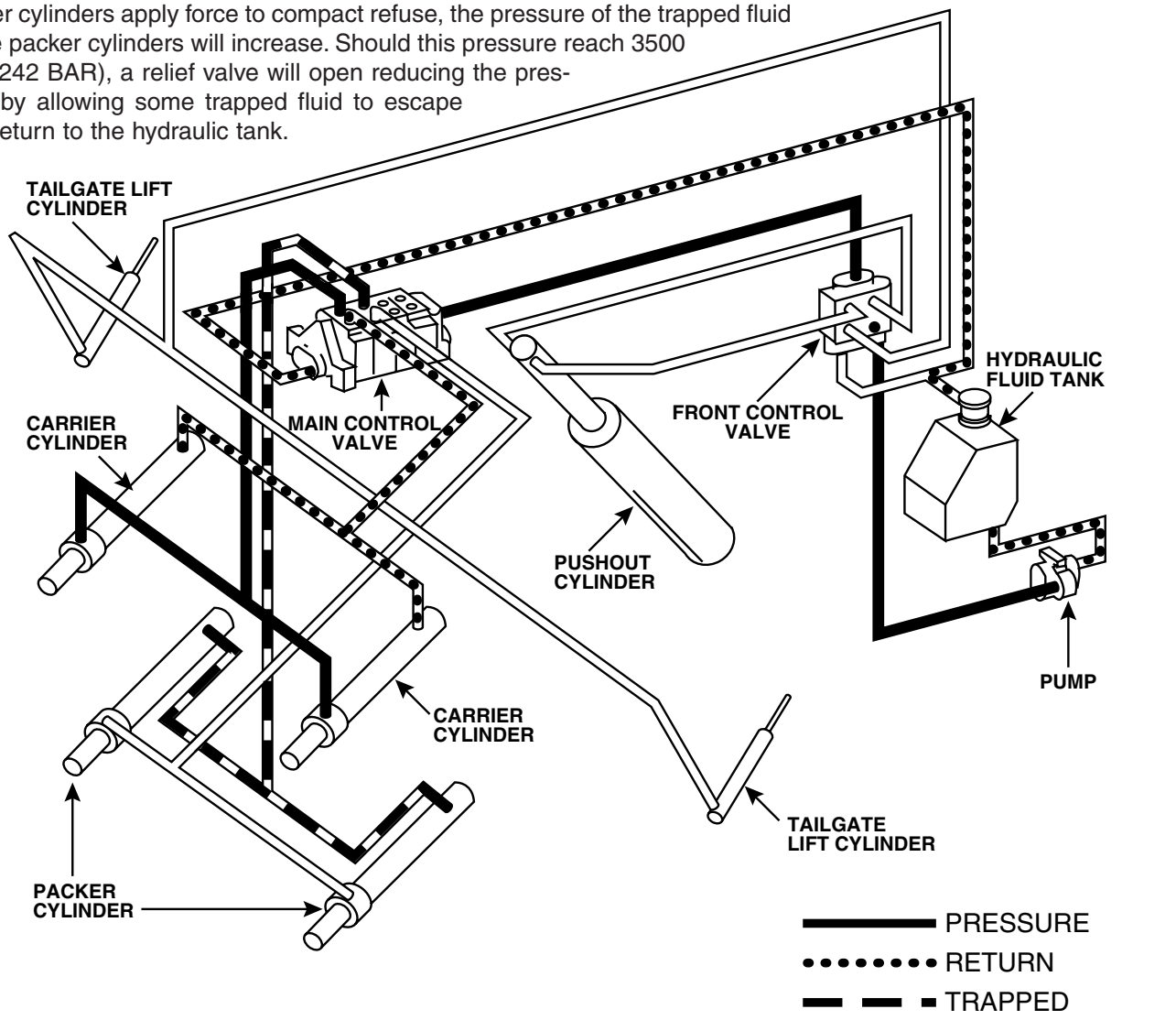
OPERATOR ACTION

None-Operating Valve shifts automatically.



HYDRAULIC SEQUENCE

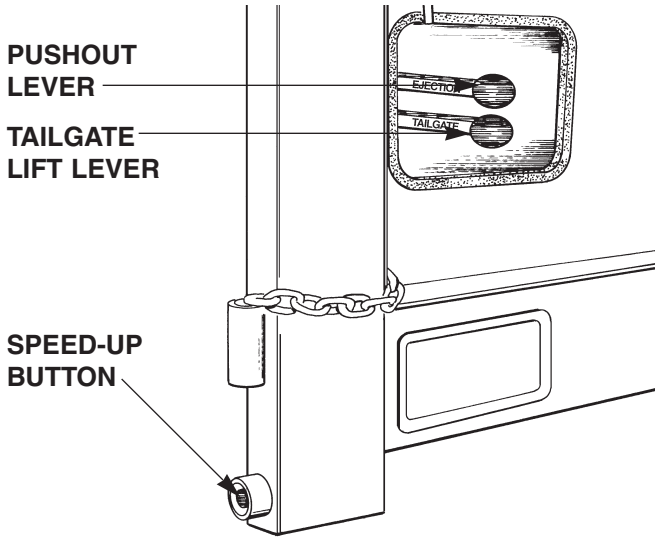
Fluid flows from the operating valve to the rod end of the carrier panel cylinders. The cylinders retract, moving the carrier and packer panels up, packing refuse against the pushout panel. When the pressure reaches the knockout setting, the operating valve shifts into neutral and the packing cycle is completed. As the carrier cylinders apply force to compact refuse, the pressure of the trapped fluid in the packer cylinders will increase. Should this pressure reach 3500 PSI (242 BAR), a relief valve will open reducing the pressure by allowing some trapped fluid to escape and return to the hydraulic tank.



RAISING TAILGATE

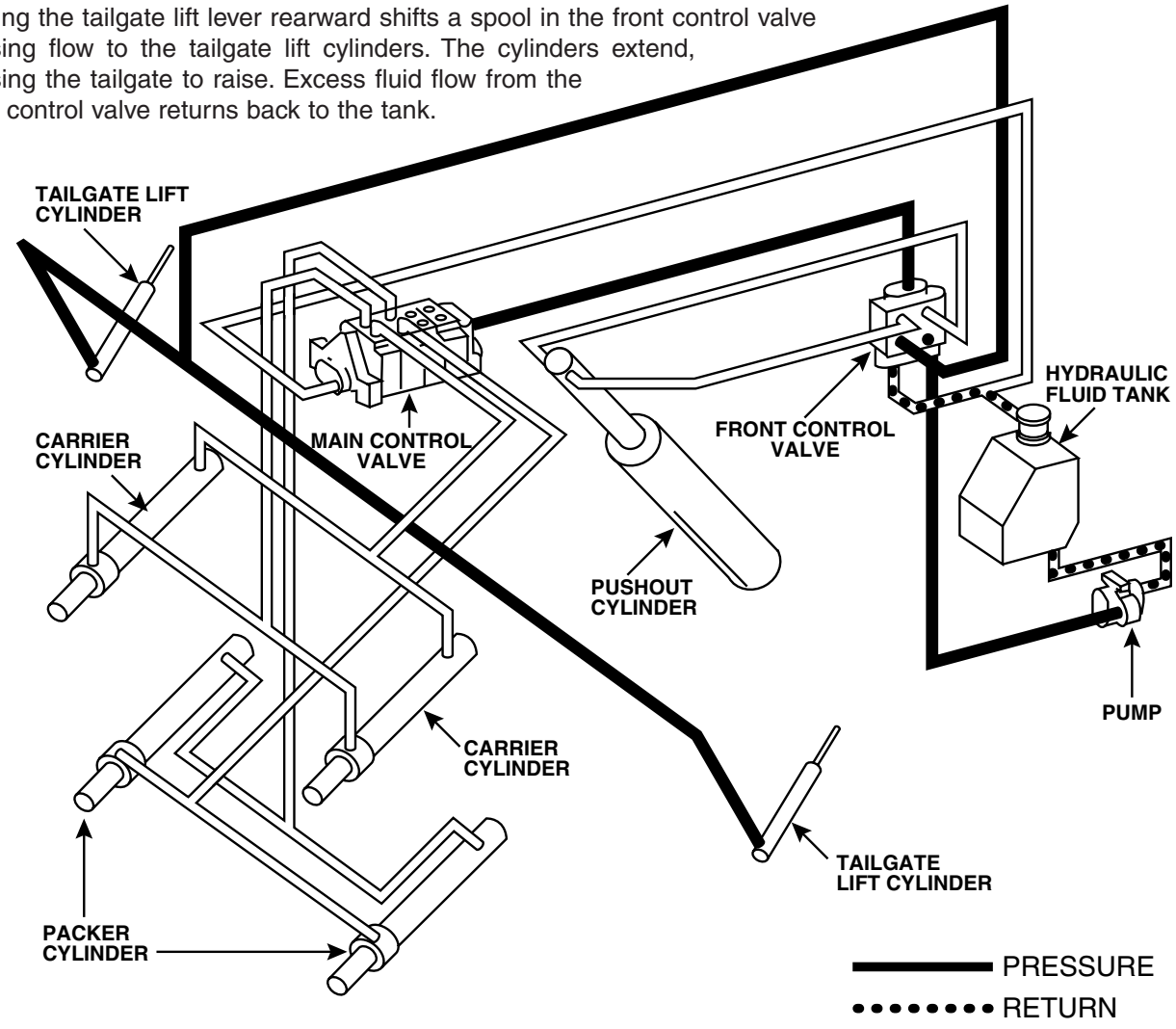
OPERATOR ACTION

Operator opens the packer panel to release pressure. Operator loosens and swings away from the body the tailgate clamps. Operator depresses the speed-up button. Operator moves the tailgate lift lever rearward.



HYDRAULIC SEQUENCE

Moving the tailgate lift lever rearward shifts a spool in the front control valve causing flow to the tailgate lift cylinders. The cylinders extend, causing the tailgate to raise. Excess fluid flow from the front control valve returns back to the tank.

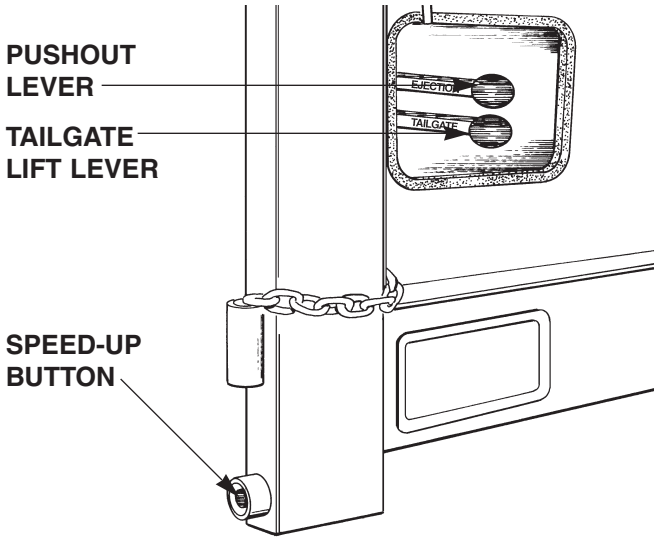


TROUBLESHOOTING

EJECTING LOAD

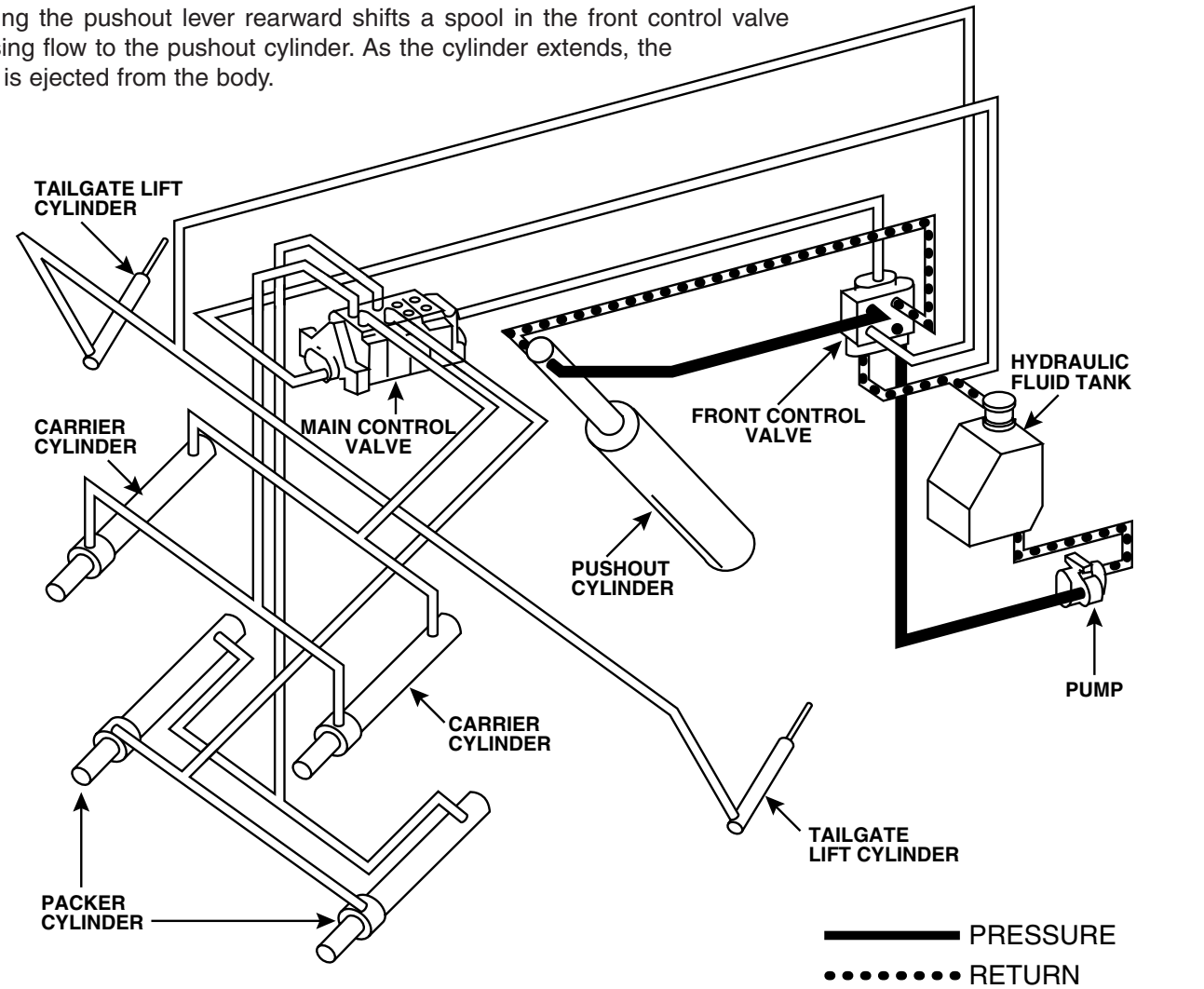
OPERATOR ACTION

Operator depresses speed-up button and moves pushout lever rearward.



HYDRAULIC SEQUENCE

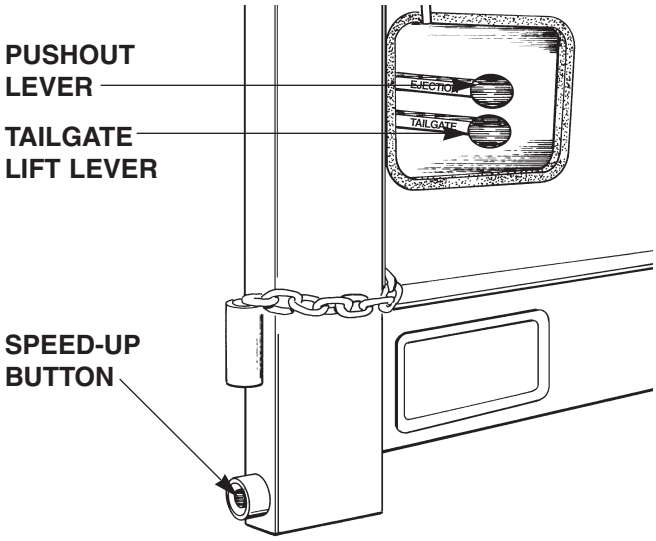
Moving the pushout lever rearward shifts a spool in the front control valve causing flow to the pushout cylinder. As the cylinder extends, the load is ejected from the body.



RETRACTING PUSHOUT PANEL

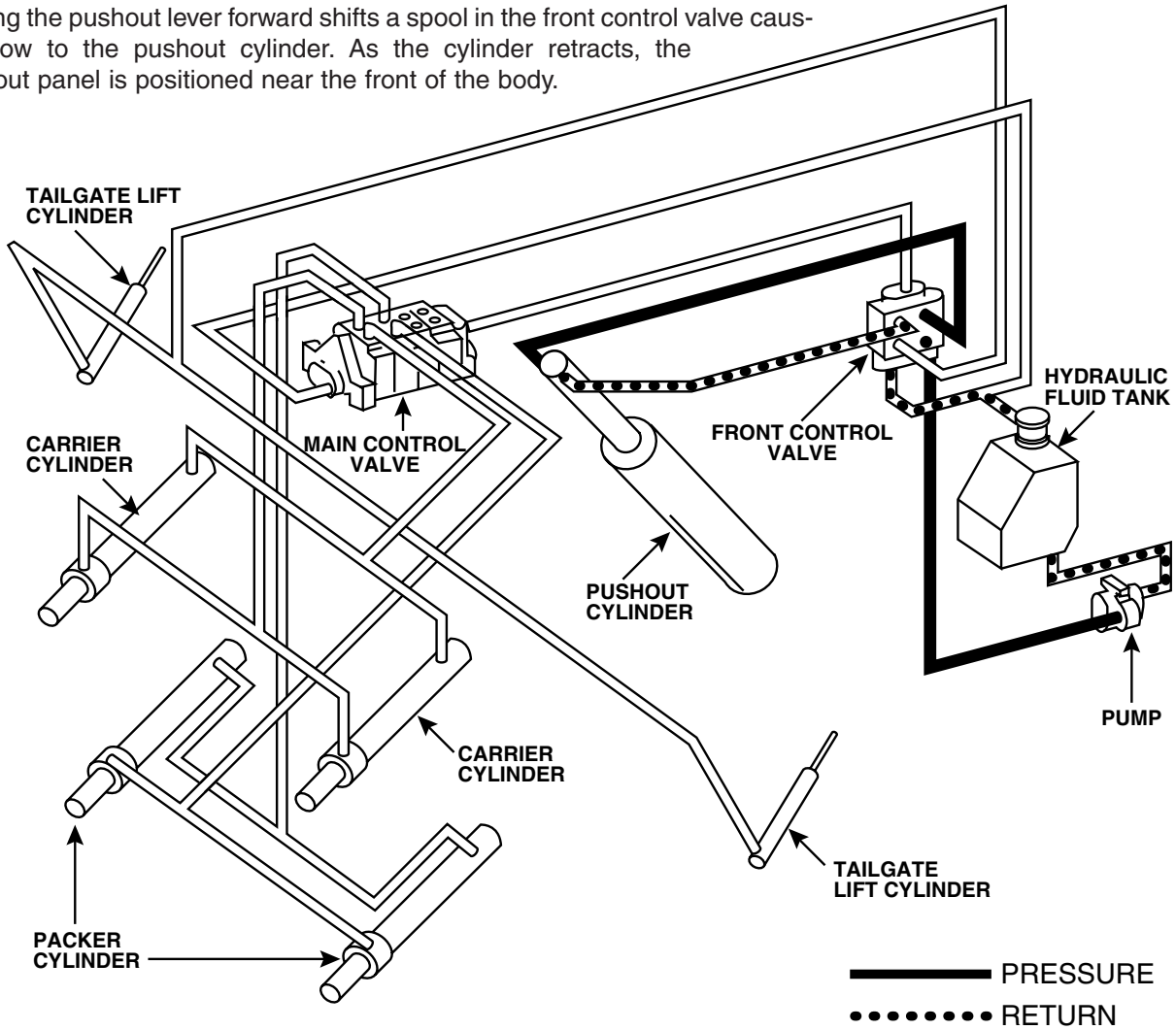
OPERATOR ACTION

Operator releases speed-up button.
Operator moves the pushout lever forward.



HYDRAULIC SEQUENCE

Moving the pushout lever forward shifts a spool in the front control valve causing flow to the pushout cylinder. As the cylinder retracts, the pushout panel is positioned near the front of the body.

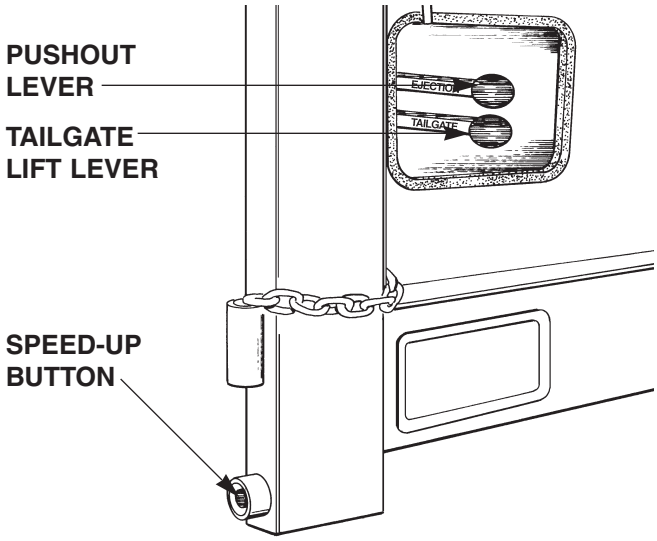


TROUBLESHOOTING

LOWERING TAILGATE

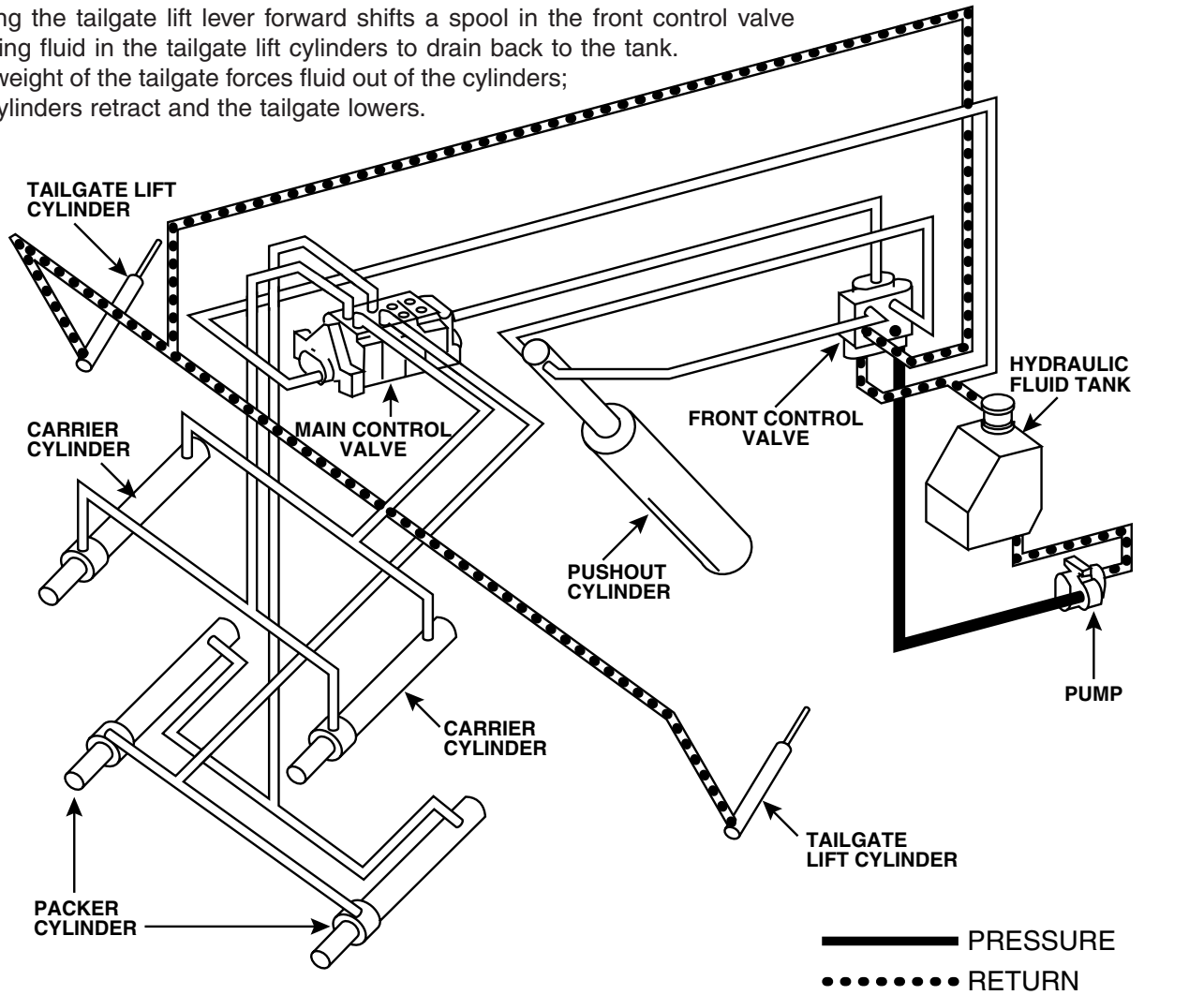
OPERATOR ACTION

Operator moves the tailgate lift lever forward.



HYDRAULIC SEQUENCE

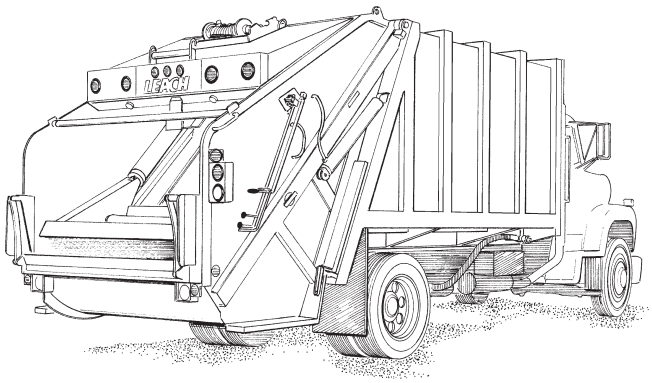
Moving the tailgate lift lever forward shifts a spool in the front control valve allowing fluid in the tailgate lift cylinders to drain back to the tank. The weight of the tailgate forces fluid out of the cylinders; the cylinders retract and the tailgate lowers.



GENERAL

This section contains the instructions necessary for the repair and replacement of the main components of the unit.

Before attempting any repair of the unit, become thoroughly familiar with the OPERATION instructions (Sec. 3) and GENERAL REPAIR PRACTICES (Sec. 4). Also, before performing any work on the unit, know and OBSERVE all SAFETY PRECAUTIONS listed in Section 1.



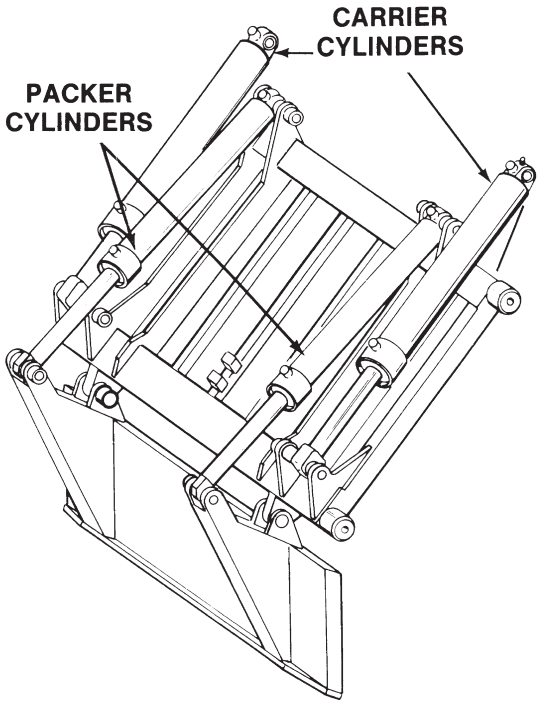
⚠WARNING

There are some procedures in this section that will require that the truck is running. In these instances the operational status will be indicated. Otherwise, make sure that the truck is shut off and the keys are removed. The pressure of the hydraulic system and resulting movement of the units' parts can cause serious injury or death.

DESCRIPTION OF CYLINDERS (CARRIER AND PACKER PANEL)

The two (2) double-acting hydraulic cylinders that control the movement of the carrier panel are called the "carrier" cylinders.

The two (2) double-acting hydraulic cylinders that control the movement of the packer panel are called the "packer" cylinders.



TEST FOR LEAKING PACKER PANEL CYLINDERS

NOTE

Before testing any cylinder, make sure the main system pressure is correct as described under MAIN LINE PRESSURE CHECK, Sec. 7, CHECK-OUT PROCEDURES.

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Remove the top sheet over the operating cylinders for better accessibility during testing.

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

2. Shift the packer panel lever outward to fully extend the packer panel cylinders.

NOTE

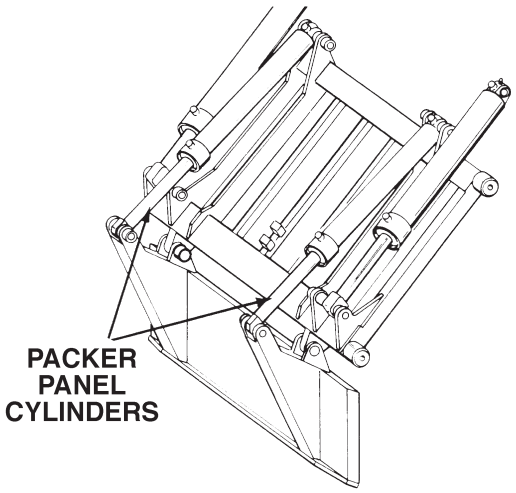
Engine speed-up only activates when carrier panel lever is activated.

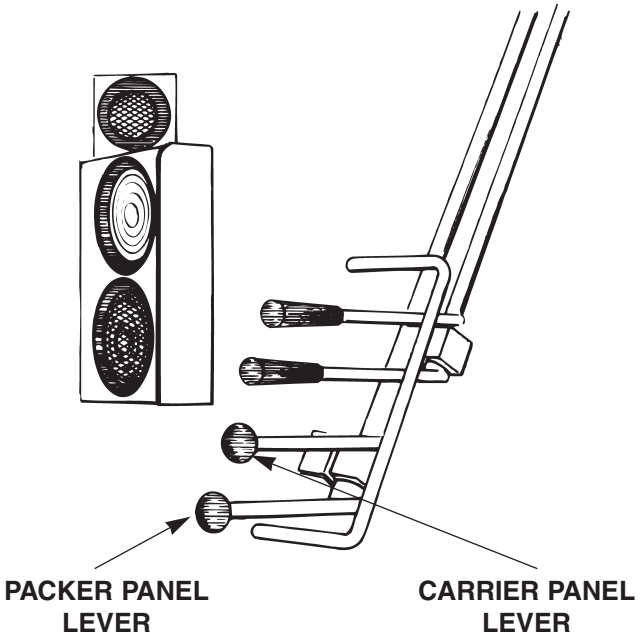
⚠CAUTION

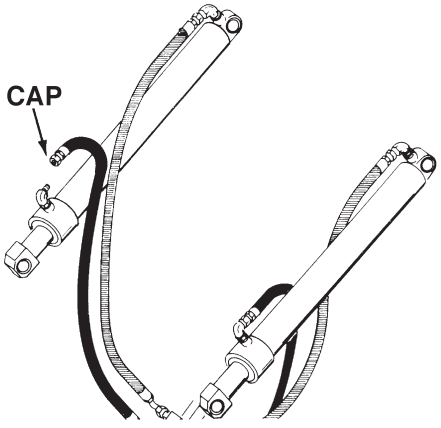
Loosen the hydraulic fittings slowly to release any trapped pressure. Watch for inadvertent movement of components.

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

3. Disconnect and cap the lines to the rod end of one cylinder at a time.







OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

4. Shift the packer panel lever outward to apply hydraulic pressure to the case end of the packer panel cylinders. Hold the lever and observe the fluid flow from the open port on the rod end. The flow of hydraulic fluid should be no more than 2 fluid ounces per minute. A flow greater than 2 ounces indicates an excessive piston seal leak. If the cylinder does not leak excessively, continue test.

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

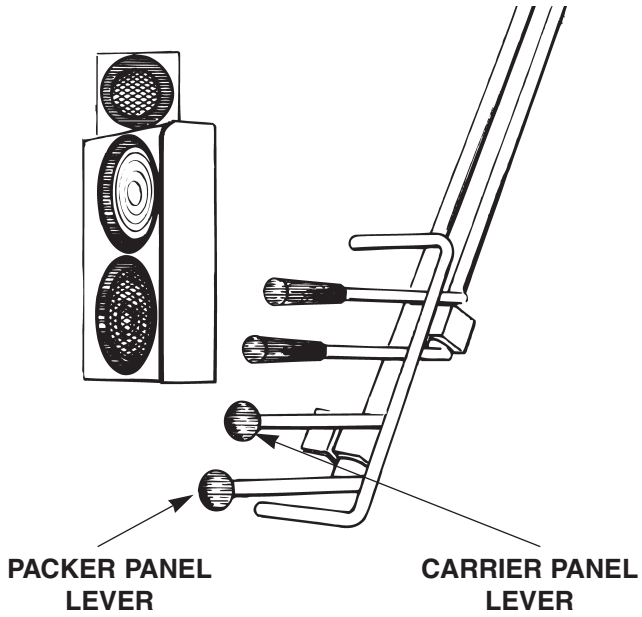
5. Reconnect the hydraulic lines to the end of cylinders. Repeat steps 3-5 for the other cylinder.

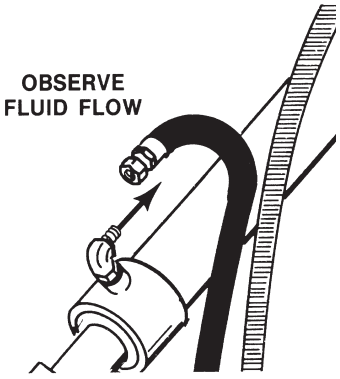
OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

6. Shift the packer panel lever inward to retract the packer panel cylinder (to the “interrupted-cycle” position).

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

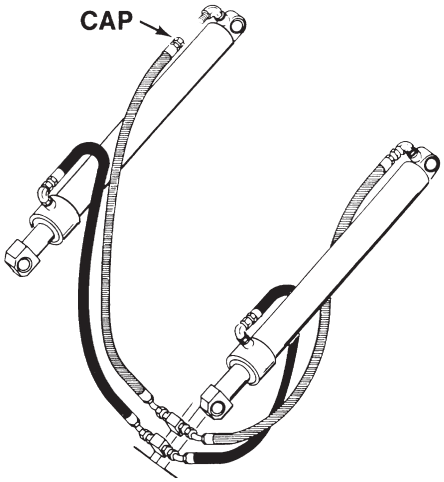
7. Disconnect and cap the hydraulic lines which connect to the case end of a packer panel cylinder.





⚠CAUTION

Loosen the hydraulic fittings slowly to release any trapped pressure. Watch for inadvertent movement of components.

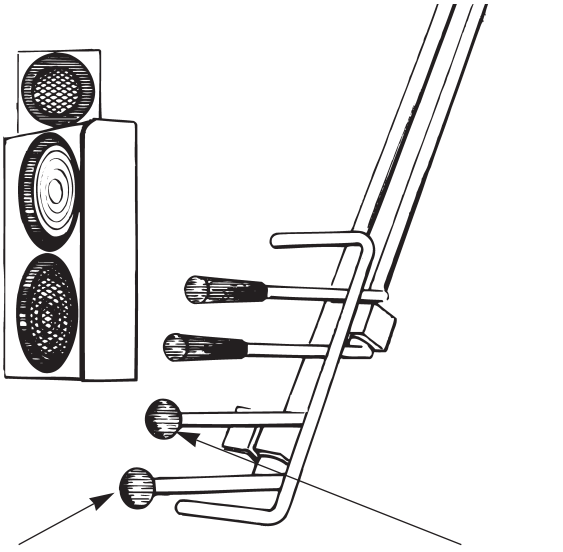


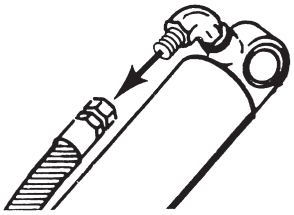
OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

8. Shift the packer panel lever inward to apply hydraulic pressure to the rod end of the packer panel cylinder. Hold the lever and observe the fluid flow from the port on the case end of the cylinder. The flow of hydraulic fluid should be no more than 2 fluid ounces per minute. A flow greater than 2 ounces indicates an excessive piston seal leak. Disassemble the cylinder and replace the piston seal as described later in this section.

OPERATIONAL STATUS		
Truck Off	PTO Disengaged	Keys Removed

9. If the cylinder does not leak, reconnect the hydraulic lines to the cylinder. Repeat steps 7-9 for the other cylinder.





⚠CAUTION

Loosen the hydraulic fittings slowly to release any trapped pressure. Watch for inadvertent movement of components.

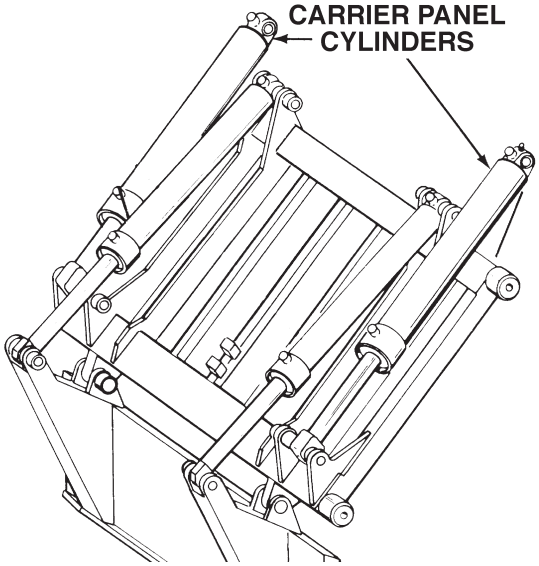
TEST FOR LEAKING CARRIER PANEL CYLINDERS

NOTE

Before testing any cylinder, make sure the main line pressure is correct as described under MAIN LINE PRESSURE CHECK, Sec. 7, CHECK-OUT PROCEDURES.

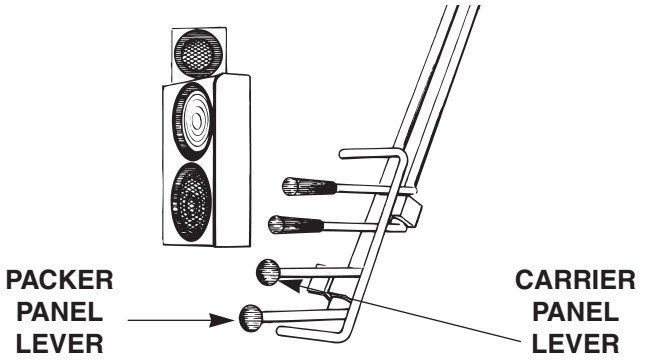
OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Remove the top sheet over the operating cylinders for better accessibility during testing.



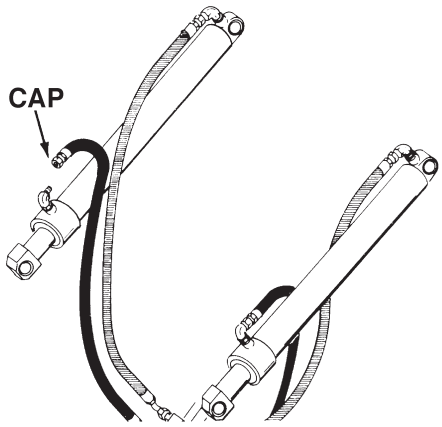
OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

2. Shift the carrier panel lever outward to fully extend the carrier panel cylinders (“home” position).



OPERATIONAL STATUS	
Truck Off	PTO Disengaged

3. Disconnect and cap the lines that connect to the rod end of one cylinder.



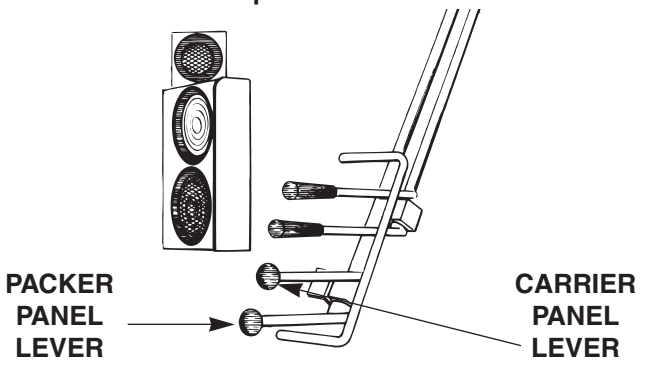
OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

⚠CAUTION

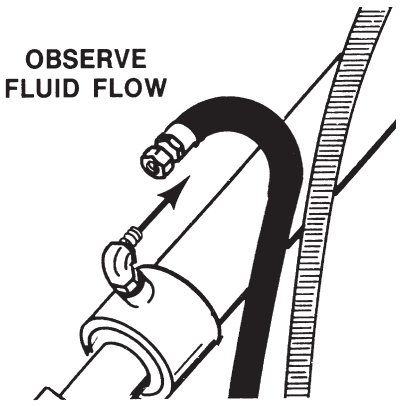
Loosen the hydraulic fittings slowly to release any trapped pressure. Watch for inadvertent movement of components.

4. Shift the carrier panel lever outward to apply hydraulic pressure to the case end of the carrier cylinders. Hold the lever and observe the fluid flow from the open port on the rod end.

   The flow of hydraulic fluid should be no more than 2 fluid ounces per minute. A flow greater than 2 ounces indicates an excessive piston seal leak. If the cylinder does not leak excessively, continue test.



OPERATIONAL STATUS	
Truck Off	PTO Disengaged

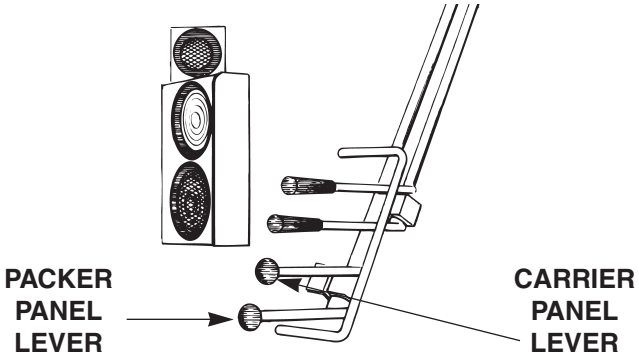


5. If the cylinder does not leak, reconnect hydraulic lines to the rod end of cylinder

   Repeat steps 3-5 for other cylinder.

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

6. Shift the carrier panel lever inward to retract the carrier panel cylinder.

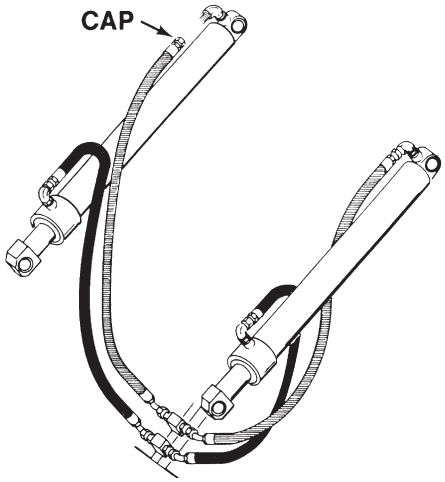


⚠CAUTION

Loosen the hydraulic fittings slowly to release any trapped pressure. Watch for inadvertent movement of components.

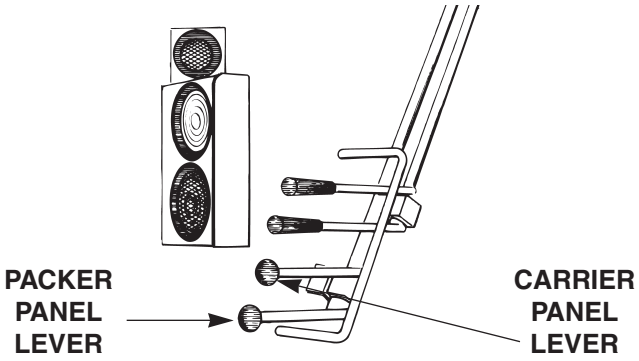
OPERATIONAL STATUS	
Truck Off	PTO Disengaged

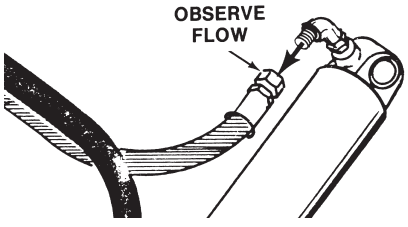
7. Disconnect and cap the hydraulic lines which connect to the case end of the carrier panel cylinder.



OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

8. Shift the carrier panel lever inward to apply hydraulic pressure to the rod end of the carrier cylinder. Hold the lever and observe the fluid flow from the port on the cylinder case end. The flow of hydraulic fluid should be no more than 2 fluid ounces per minute. A flow greater than 2 ounces indicates an excessive piston seal leak. Disassemble the cylinder and replace the piston seal.





OPERATIONAL STATUS	
Truck Off	PTO Disengaged

9. If the cylinder does not leak, reconnect the hydraulic lines to the case end of the carrier panel cylinder.

REMOVAL OF PACKER PANEL CYLINDERS

OPERATIONAL STATUS	
Truck Off	Keys Removed

1. Position the packer panel to the “interrupted cycle” position and then sweep the packer plate to the vertical position.

OPERATIONAL STATUS			
Truck Running	PTO Engaged	Sol. Sw.	On

2. Remove the topsheets to provide better accessibility to the packer panel.

NOTE

See Sec. 4, GENERAL REPAIR PRACTICES, for more detailed information about the correct use of slings and lifting chains.

3. Secure a nylon sling around the cylinder as shown and attach to a suitable lifting device with a minimum lifting capacity of 500 lbs. (227 kg.). Operate the hoist to make the lifting cable snug without applying strain on the cylinder.

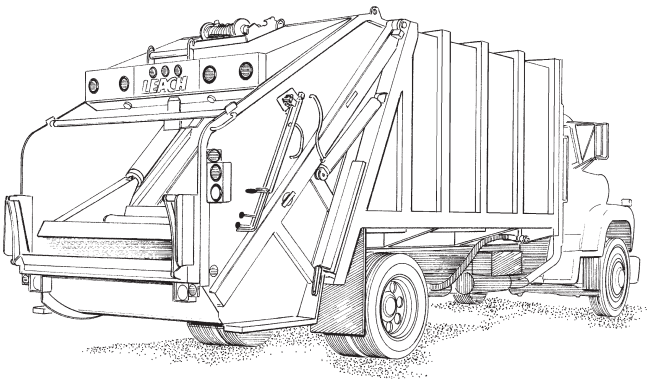
OPERATIONAL STATUS	
Truck Off	Keys Removed

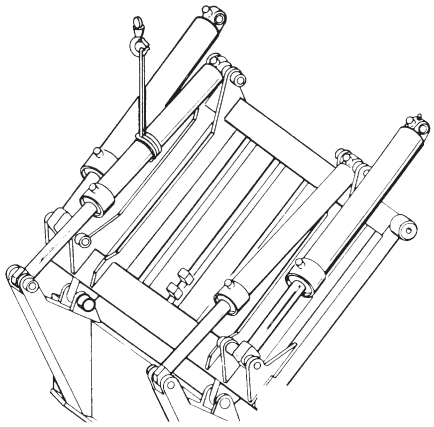
4. Remove the capscrew from the rod end pin retainer.

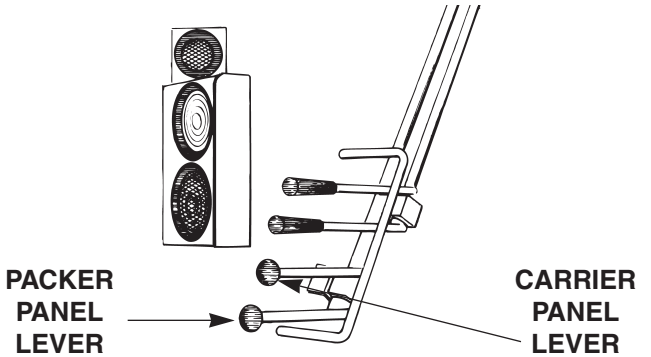
5. Make sure the cylinder weight is securely supported by the hoist and carefully remove the pivot pin. Check for pivot pin or pin hub wear.

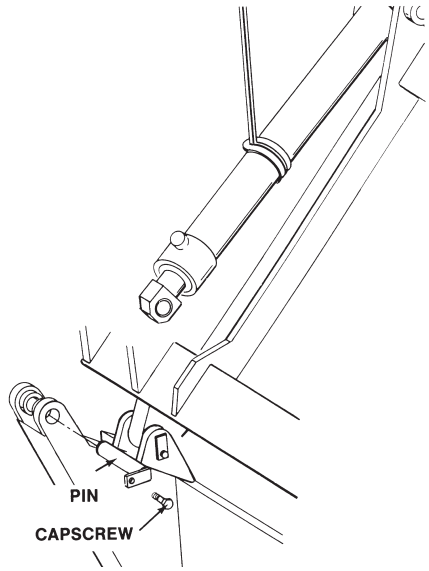
OPERATIONAL STATUS			
Truck Running	PTO Engaged	Sol. Sw.	Off

6. Slowly operate the packer panel lever inward to completely retract the cylinder.









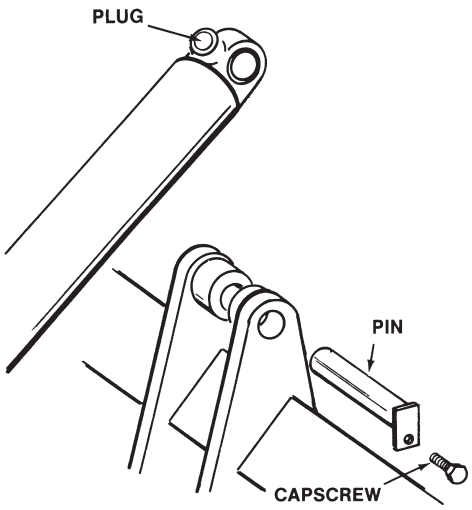
OPERATIONAL STATUS	
Truck Off	Keys Removed

7. Disconnect both the case end and rod end hoses. Immediately cap or plug the hoses and cylinder ports to keep fluid in and dirt out.

8. Remove capscrew from the case end.

9. Remove the pivot pin by using pin puller (See Sec. 10, SERVICE TOOLS).

10. Check for pivot pin or pin hub wear.



REMOVAL OF CARRIER PANEL CYLINDERS

OPERATIONAL STATUS	
Truck Off	Keys Removed

1. Remove the topsheets to provide better accessibility.

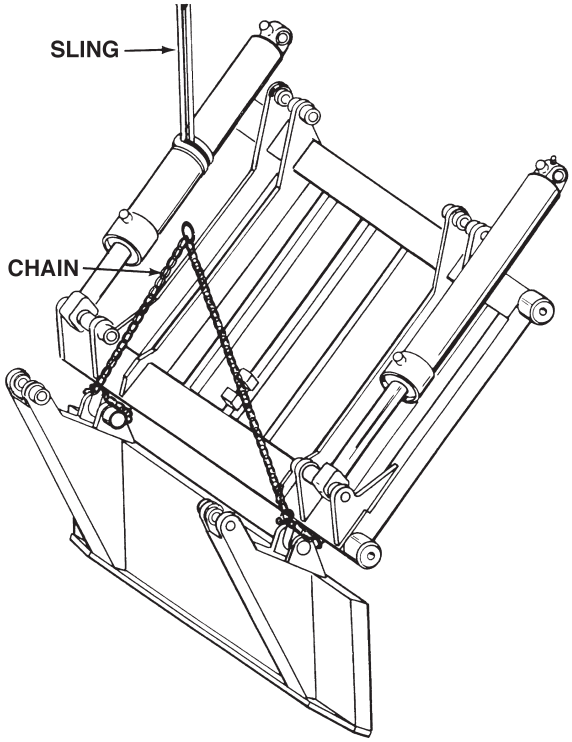
NOTE

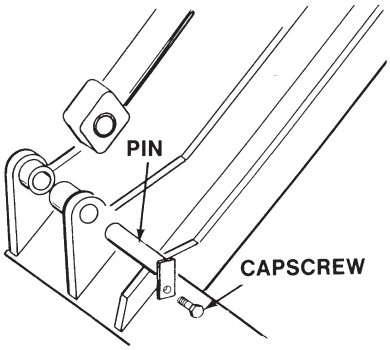
See Sec. 4, GENERAL REPAIR PRACTICES, for more detailed information about the correct use of slings and lifting chains.

2. Secure a chain to the lower end of the carrier panel. Attach the other end to a suitable lifting device with a minimum lifting capacity of 1,600 lbs. Adjust the hoist so that it will support the panel once the carrier cylinders are removed.

3. Once the carrier panel has been securely supported, secure a nylon sling around the carrier cylinder and attach to a lifting device with a minimum lifting capacity of 500 lbs. Operate the hoist to snug the lifting sling without applying strain to the cylinder.

4. Remove the capscrew from the rod end. Carefully remove the pivot pin. Use special pin puller (See Section 10, SERVICE TOOLS).





DISASSEMBLY OF PACKER PANEL CYLINDERS

1. Remove grease fitting, clean parts, drain fluid and follow all other applicable guidelines for disassembly provided in Section 4, General Repair Practices, before proceeding to disassemble the cylinder.

2. Secure the case end of the cylinder to the floor or workbench.

3. Secure the rod end of the cylinder to an overhead hoist device with a minimum lifting capacity of 500 lbs.

4. Remove the setscrew from the gland retainer.

5. Remove the gland retainer.

6. Slowly operate the lifting device to carefully pull the piston rod assembly out of the cylinder.

NOTE

Use an electric drill with an internal grinding wheel to remove any burrs from the internal groove on the cylinder case. Otherwise the cylinder may be difficult to take apart.

INSPECTION AND REPLACEMENT

1. Carefully and thoroughly inspect the bore of the cylinder case for cracks, rust, scoring, or excessive wear. Replace if found not to be serviceable. Check all other parts for damage.

2. A new rod wiper, rod seal, O-rings, and piston seals must be installed anytime the cylinder is disassembled. Pay particular attention to me way the parts are positioned before disassembly.

REASSEMBLY AND INSTALLATION

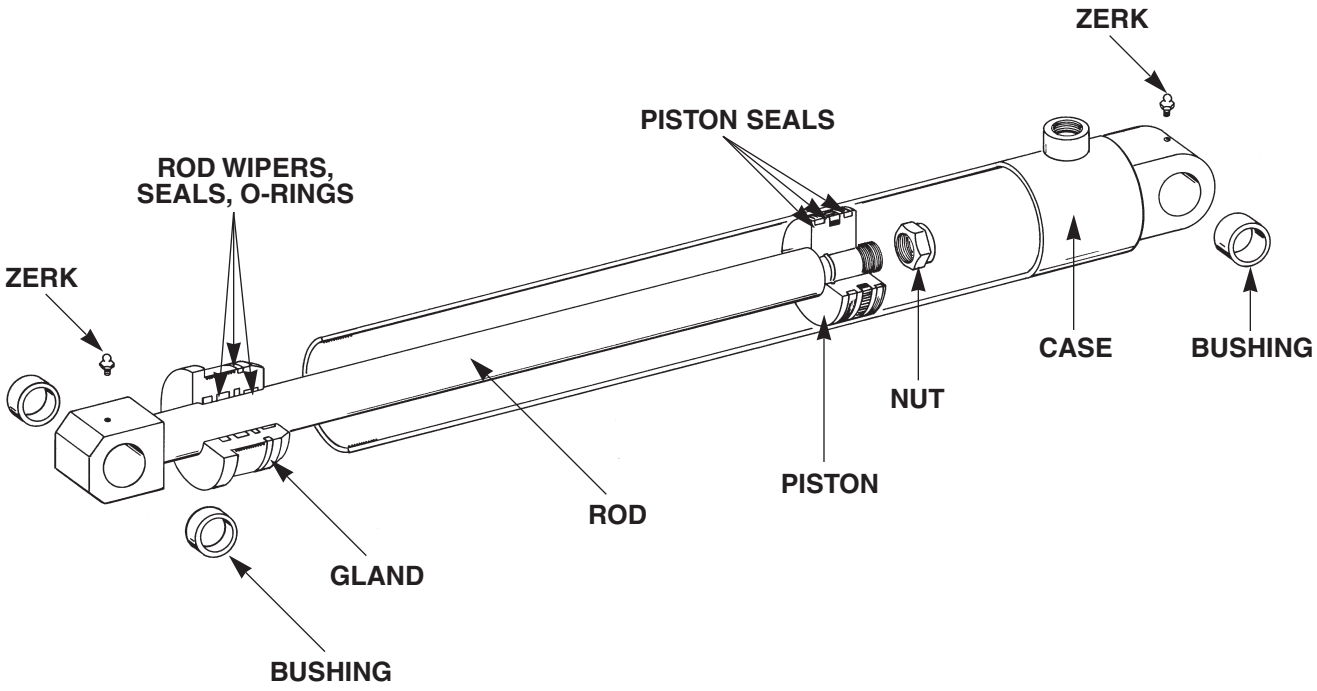
Reassemble and install the cylinder in the approximate reverse order of assembly.

NOTE

If the cylinder is not to be installed immediately, keep the ports sealed to prevent contamination from entering the cylinder.

NOTE

Special tools, listed in Section 10, SERVICE TOOLS, may be necessary to properly reassemble the cylinder.



DISASSEMBLY OF CARRIER PANEL CYLINDERS

1. Remove grease fitting, clean parts, drain fluid and follow all other applicable guidelines for disassembly provided in Section 4, General Repair Practices, before proceeding to disassemble the cylinder.

2. Secure the case end of the cylinder to the floor or workbench.

3. Secure the rod end of the cylinder to an overhead hoist device with a minimum lifting capacity of 500 lbs.

4. Remove the setscrew that retains the gland.

5. Remove the gland.

6. Slowly operate the lifting device to carefully pull the piston rod assembly out of the cylinder.

NOTE

Use an electric drill with an internal grinding wheel to remove any burrs from the internal groove on the cylinder case. Otherwise the cylinder may be difficult to take apart.

INSPECTION AND REPLACEMENT

1. Carefully and thoroughly inspect the bore of the cylinder case for cracks, rust, scoring, or excessive wear. Replace if found not to be serviceable. Check all other parts for damage.

2. A new rod wiper, rod seal, O-rings, and piston seals must be installed anytime the cylinder is disassembled. Pay particular attention to me way the parts are positioned before disassembly.

REASSEMBLY AND INSTALLATION

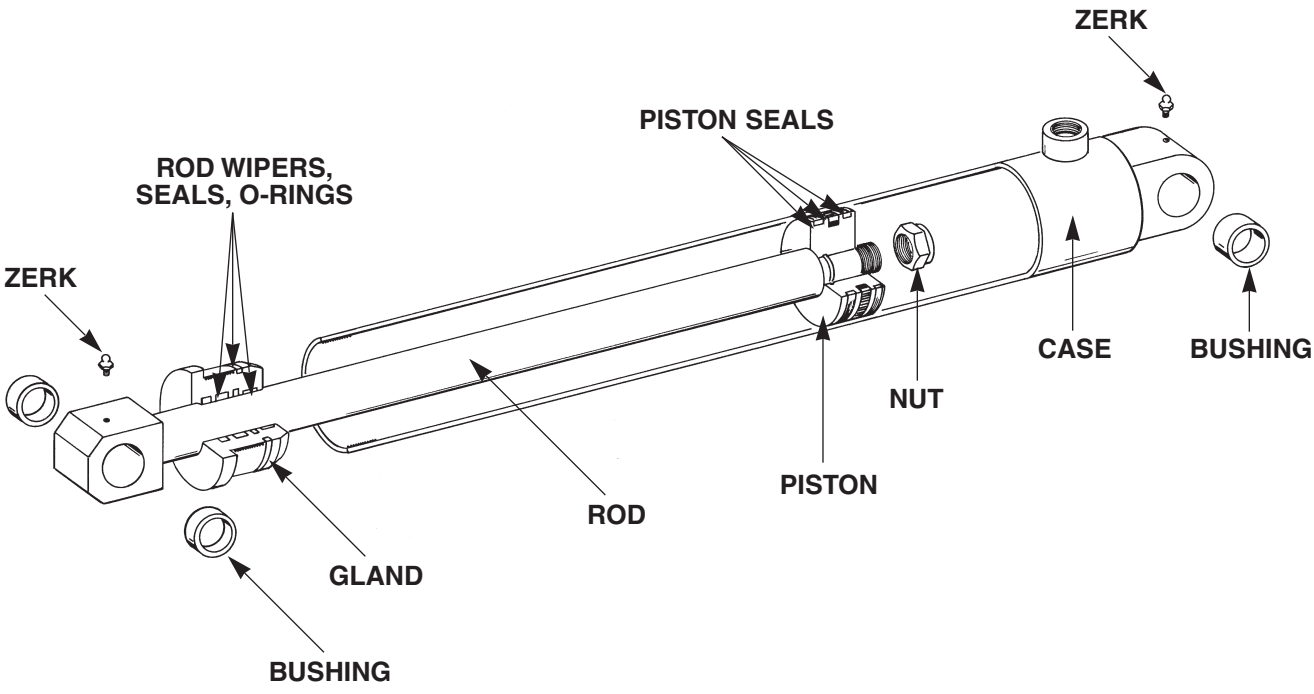
Reassemble and install the cylinder in the approximate reverse order of assembly.

NOTE

If the cylinder is not to be installed immediately, keep the ports sealed to prevent contamination from entering the cylinder.

NOTE

Special tools, listed in Section 10, SERVICE TOOLS, may be necessary to properly reassemble the cylinder.



DISASSEMBLY OF PACKER PANEL CYLINDERS

1. Remove grease fitting, clean parts, drain fluid and follow all other applicable guidelines for disassembly provided in Section 4, General Repair Practices, before proceeding to disassemble the cylinder.

2. Secure the case end of the cylinder to the floor or workbench.

3. Secure the rod end of the cylinder to an overhead hoist device with a minimum lifting capacity of 500 lbs.

4. Remove the setscrew from the gland retainer.

5. Remove the gland retainer.

6. Slowly operate the lifting device to carefully pull the piston rod assembly out of the cylinder.

NOTE

Use an electric drill with an internal grinding wheel to remove any burrs from the internal groove on the cylinder case. Otherwise the cylinder may be difficult to take apart.

INSPECTION AND REPLACEMENT

1. Carefully and thoroughly inspect the bore of the cylinder case for cracks, rust, scoring, or excessive wear. Replace if found not to be serviceable. Check all other parts for damage.

2. A new rod wiper, rod seal, O-rings, and piston seals must be installed anytime the cylinder is disassembled. Pay particular attention to me way the parts are positioned before disassembly.

REASSEMBLY AND INSTALLATION

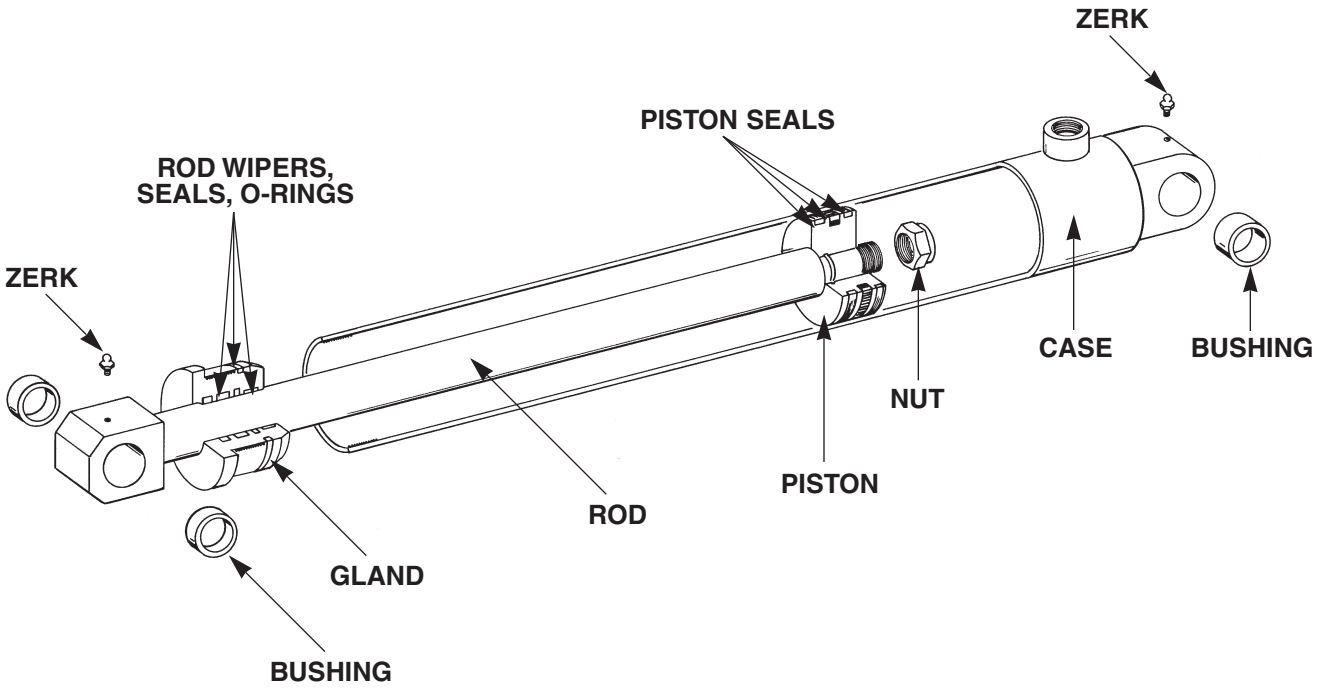
Reassemble and install the cylinder in the approximate reverse order of assembly.

NOTE

If the cylinder is not to be installed immediately, keep the ports sealed to prevent contamination from entering the cylinder.

NOTE

Special tools, listed in Section 10, SERVICE TOOLS, may be necessary to properly reassemble the cylinder.



DISASSEMBLY OF CARRIER PANEL CYLINDERS

1. Remove grease fitting, clean parts, drain fluid and follow all other applicable guidelines for disassembly provided in Section 4, General Repair Practices, before proceeding to disassemble the cylinder.

2. Secure the case end of the cylinder to the floor or workbench.

3. Secure the rod end of the cylinder to an overhead hoist device with a minimum lifting capacity of 500 lbs.

4. Remove the setscrew that retains the gland.

5. Remove the gland.

6. Slowly operate the lifting device to carefully pull the piston rod assembly out of the cylinder.

NOTE

Use an electric drill with an internal grinding wheel to remove any burrs from the internal groove on the cylinder case. Otherwise the cylinder may be difficult to take apart.

INSPECTION AND REPLACEMENT

1. Carefully and thoroughly inspect the bore of the cylinder case for cracks, rust, scoring, or excessive wear. Replace if found not to be serviceable. Check all other parts for damage.

2. A new rod wiper, rod seal, O-rings, and piston seals must be installed anytime the cylinder is disassembled. Pay particular attention to me way the parts are positioned before disassembly.

REASSEMBLY AND INSTALLATION

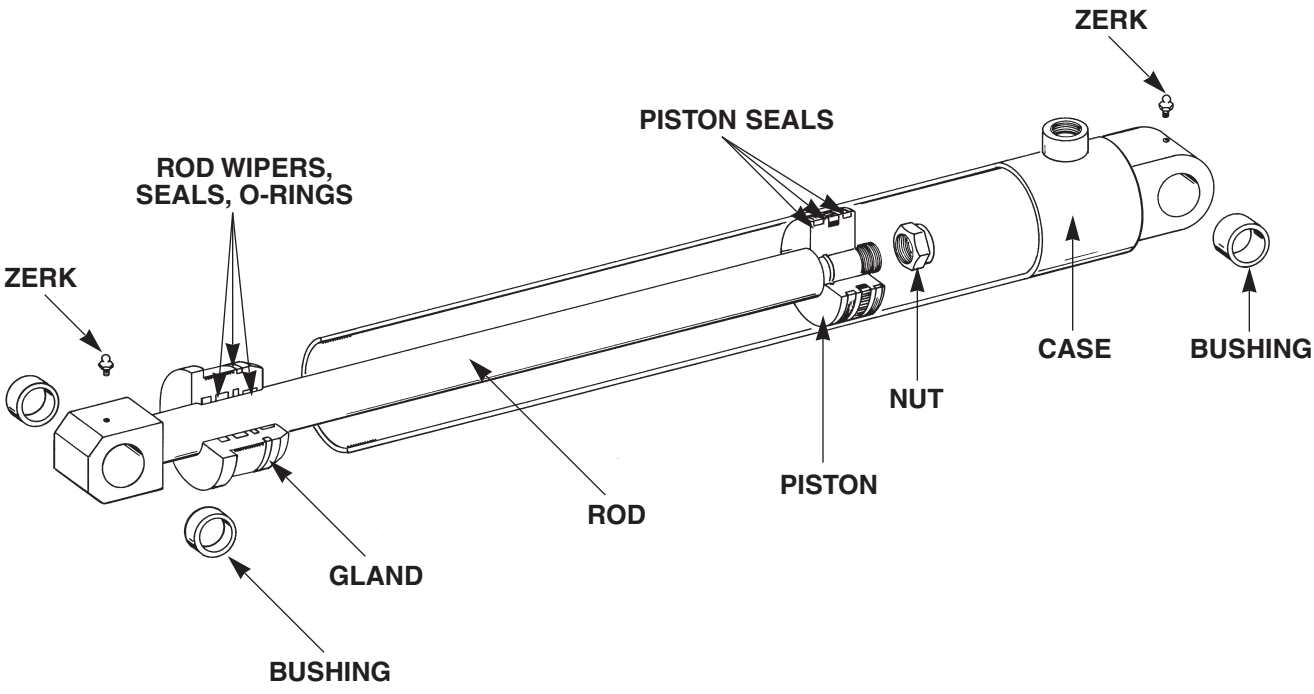
Reassemble and install the cylinder in the approximate reverse order of assembly.

NOTE

If the cylinder is not to be installed immediately, keep the ports sealed to prevent contamination from entering the cylinder.

NOTE

Special tools, listed in Section 10, SERVICE TOOLS, may be necessary to properly reassemble the cylinder.



DISASSEMBLY OF PACKER PANEL CYLINDERS

1. Remove grease fittings, clean parts, drain fluid and follow all other applicable guidelines for disassembly provided in Section 4, General Repair Practices, before proceeding to disassemble the cylinder.

2. Secure the case end of the cylinder to the floor or workbench.

3. Secure the rod end of the cylinder to an overhead hoist or other suitable lifting mechanism with a minimum lifting capacity of 500 lbs.

4. Remove the six nylock screws and three lock segments securing the head gland to the cylinder.

5. Slowly operate the lifting device to carefully pull the piston rod assembly out of the cylinder.

NOTE

Use an electric drill with an internal grinding wheel to remove any burrs from the internal groove on the cylinder case. Otherwise the cylinder may be difficult to take apart.

INSPECTION AND REPLACEMENT

1. Carefully and thoroughly inspect the bore of the cylinder case for cracks, rust, scoring, or excessive wear. Replace if found not to be serviceable. Check all other parts for damage.

2. A new rod wiper, rod seal, O-rings, and piston seals must be installed anytime the cylinder is disassembled. Pay particular attention to me way the parts are positioned before disassembly.

REASSEMBLY AND INSTALLATION

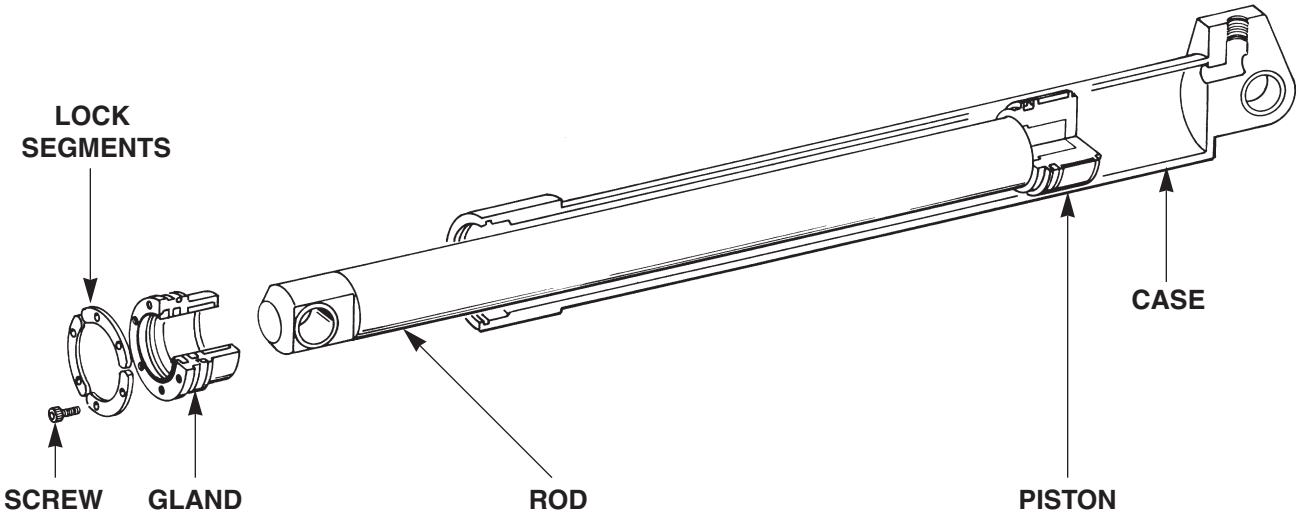
Reassemble and install the cylinder in the approximate reverse order of assembly.

NOTE

If the cylinder is not to be installed immediately, keep the ports sealed to prevent contamination from entering the cylinder.

NOTE

Special tools, listed in Section 10, SERVICE TOOLS, may be necessary to properly reassemble the cylinder.



DISASSEMBLY OF CARRIER PANEL CYLINDERS

1. Remove grease fitting, clean parts, drain fluid and follow all other applicable guidelines for disassembly provided in Section 4, General Repair Practices, before proceeding to disassemble the cylinder.

2. Secure the case end of the cylinder to the floor or workbench.

3. Secure the rod end of the cylinder to an overhead hoist device with a minimum lifting capacity of 500 lbs.

4. Remove the setscrew from the gland retainer.

5. Remove the gland retainer.

6. Slowly operate the lifting device to carefully pull the piston rod assembly out of the cylinder.

NOTE

Use an electric drill with an internal grinding wheel to remove any burrs from the internal groove on the cylinder case. Otherwise the cylinder may be difficult to take apart.

INSPECTION AND REPLACEMENT

1. Carefully and thoroughly inspect the bore of the cylinder case for cracks, rust, scoring, or excessive wear. Replace if found not to be serviceable. Check all other parts for damage.

2. A new rod wiper, rod seal, O-rings, and piston seals must be installed anytime the cylinder is disassembled. Pay particular attention to me way the parts are positioned before disassembly.

REASSEMBLY AND INSTALLATION

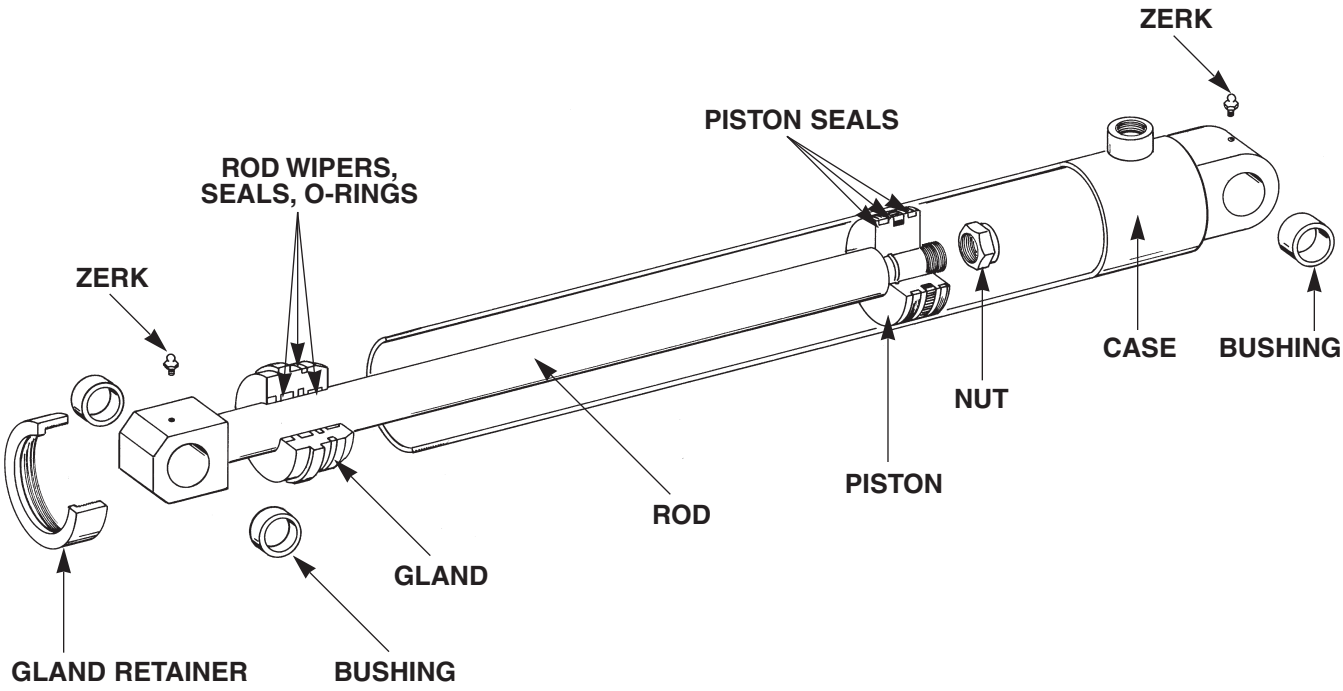
Reassemble and install the cylinder in the approximate reverse order of assembly.

NOTE

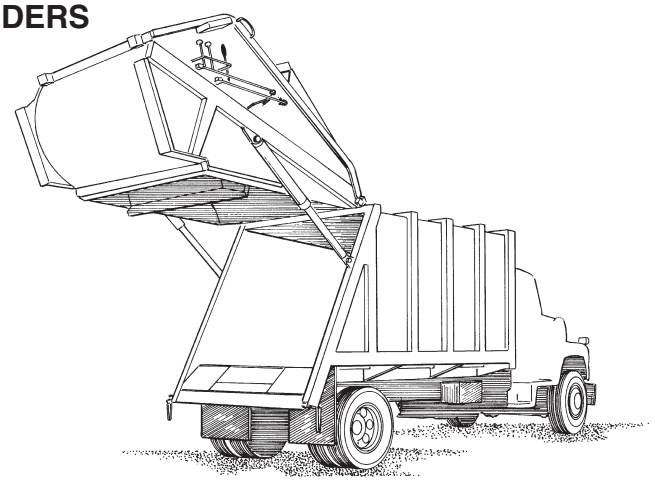
If the cylinder is not to be installed immediately, keep the ports sealed to prevent contamination from entering the cylinder.

NOTE

Special tools, listed in Section 10, SERVICE TOOLS, may be necessary to properly reassemble the cylinder.



DESCRIPTION OF THE TAILGATE LIFT CYLINDERS



These two (2) hydraulically operated cylinders, mounted on each side of the tailgate, lift and lower the tailgate assembly. The rod end is pinned to a pivot ear on the body frame near the discharge opening, while the cylinder weldment pivot ear is attached to a mounting hub on the tailgate.

The cylinders raise the tailgate by means of hydraulic fluid flowing through a port on the case end of the cylinder, extending the cylinder. The tailgate is lowered by the weight of the tailgate forcing oil from the cylinder.

CHECK FOR LEAKING TAILGATE LIFT CYLINDER

The tailgate lift cylinder utilizes a design that does not incorporate a cylinder piston, such as a typical cylinder would. This cylinder incorporates a hollow piston rod, to allow the hydraulic fluid to extend the rod by applying pressure to the inside of the rod. The rod is ported to allow hydraulic fluid to pass from the area between the rod and the case to inside the case. When the cylinder is being retracted, fluid is then allowed to pass through this porting from the inside of the rod to the area between the rod and the case. Therefore, the cylinder rod is protected in hydraulic fluid when retracted, greatly reducing the chances of damage by means of rust, corrosion, etc.

Visual inspection of the tailgate cylinders is the only leakage test necessary for this design cylinder. Check the cylinder rods for damage such as scratches, nicks, etc. If any external leakage is present, repair the cylinder as described under the removal and disassembly guidelines.

REMOVAL OF TAILGATE LIFT CYLINDER

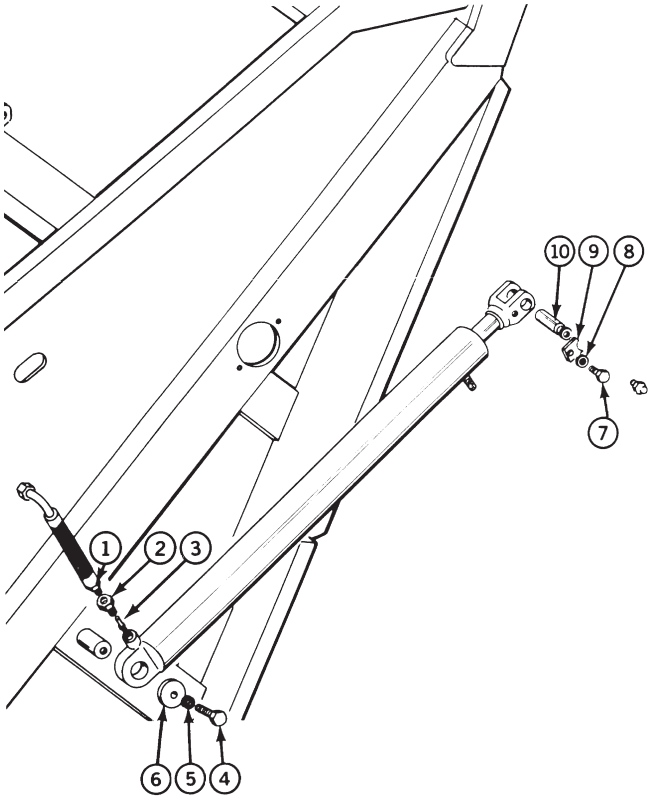
OPERATIONAL STATUS	
Truck Off	Keys Removed

1. With the tailgate closed, attach a sling connected to a suitable lifting device with a minimum lifting capacity of 500 lbs., to the tailgate lift cylinder.

NOTE

See Section 4, GENERAL REPAIR PRACTICES, for more detailed information about the correct use of slings and lifting chains.

2. Disconnect the hydraulic line (1) at the cylinder base and cap the line.
3. Remove the adapter (2), restriction pin (3) and plug the cylinder port.
4. Remove the capscrew (4), washer (5) and retainer (6) from the cylinder end.
5. Remove the capscrew (7), lockwashers (8), retainer (9) and pin (10).



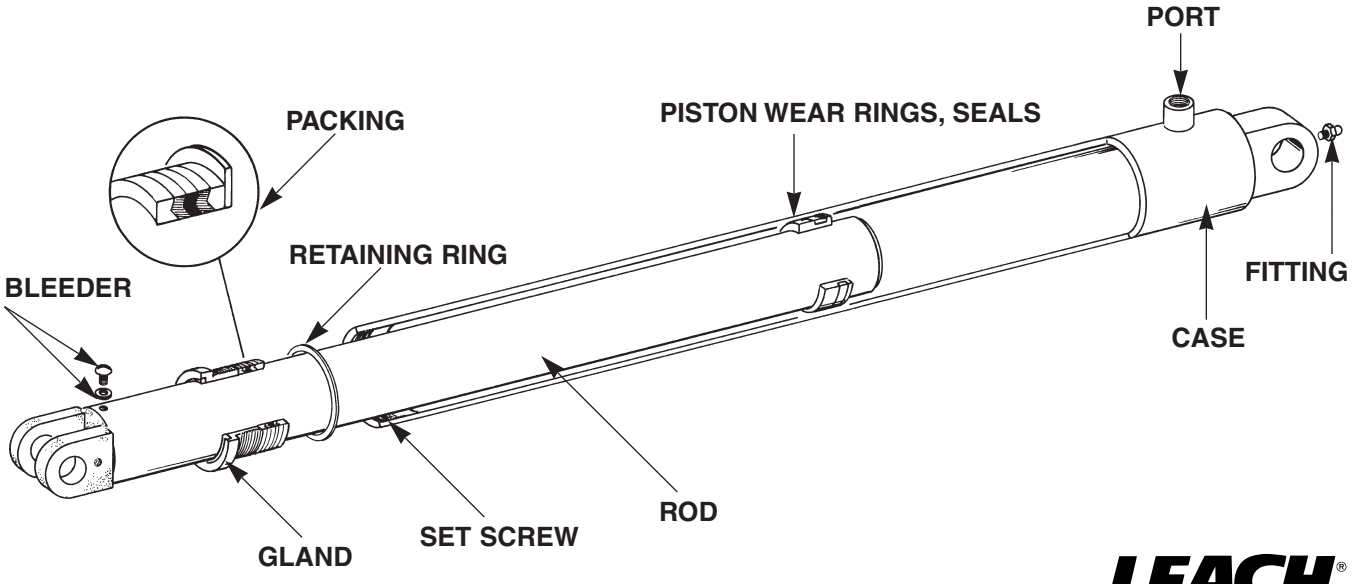
SERVICE AND REPAIR

DISASSEMBLY OF TAILGATE LIFT CYLINDER

1. Wash the outside of the cylinder assembly completely to prevent contamination and/or damage to the cylinder components.
2. Secure the case end of the cylinder to a workbench or floor mount and the rod end to an overhead lifting device with a minimum lifting capacity of 500 lbs.
3. Remove the plug from the port and drain all fluid.
4. Remove the 1/4" socket head setscrew from side of the cylinder case, and discard.
5. Remove the bleeder screw and gasket from the end of the cylinder rod. Save these for reassembly.
6. Unscrew the head gland from the cylinder case completely. Slide the head gland off of the the rod.
7. Using the overhead lifting device, carefully extend the cylinder rod approximately 1/2 way out of the case.
8. Apply a 6" piece of 1" masking tape to the chrome surface of the exposed section of the cylinder rod, about 1/2 way up the cylinder rod. The tape should be applied in a diagonal fashion on the rod.
9. Push the rod back into the case, then again using the overhead lifting device, extend the rod 1/2 way out. The cylinder packing should slide out with the taped section of the rod. If not, repeat until the packing slides out. Slide the packing off of the rod and discard.
10. Using a long screwdriver or pick, remove the retaining ring from the inside of the cylinder, between the case and the rod. Use care to avoid damage to the case or rod surfaces. Slide the retaining ring off of the rod and discard.
11. Slide the rod assembly out of the case.
12. Remove the wear ring from the bottom of the cylinder rod and discard.
13. Remove the wiper from the head gland.

INSPECTION, REASSEMBLY AND INSTALLATION

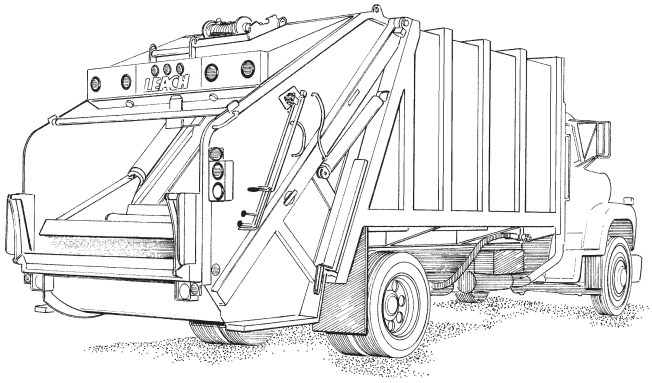
1. Thoroughly check all components of the cylinder for cracks, scoring or uneven wear. Parts that must be replaced together, such as seals and wear rings, are available as a repair kit from your authorized Leach dealer.
2. Liberally coat all seals and wear rings with clean, fresh hydraulic fluid before installation.
3. Assembly of the tailgate lift cylinder is in approximate reverse order of disassembly.
4. Install the packing into the cylinder, using a flat punch to push it in place. Tighten the head gland only enough to prevent leakage from the cylinder.
5. Check all cylinder mounting components for cracks or excessive wear before installation. If the cylinder is not to be installed immediately, keep the port sealed to prevent contamination.
6. After installation of the cylinder is complete, clamp the tailgate in the down position and remove the bleeder screw from the cylinder rod. Operate the control lever until oil flows from e bleeder port. Install the bleeder screw.
7. Fully extend and retract the cylinder twice, clamp the tailgate in the down position, and once again remove the bleeder screw. Operate the control lever. After all air has exited the cylinder, install the bleeder screw.
8. Check for any external leaks on the cylinder and connecting fittings.



DESCRIPTION OF THE TAILGATE ASSEMBLY

The tailgate assembly houses the carrier and packer panel cylinders, carrier and packer panels and the "hopper" where refuse is first loaded into the Delta. The tailgate is raised (for unloading) and lowered by the tailgate lift cylinders which are actuated by the tailgate lift lever.

The need to remove the tailgate is rare and limited to repair of the hopper area and removal of the carrier panel. Procedures for carrier panel removal are different and are covered under REMOVAL OF CARRIER PANEL.



REMOVAL OF THE TAILGATE ASSEMBLY

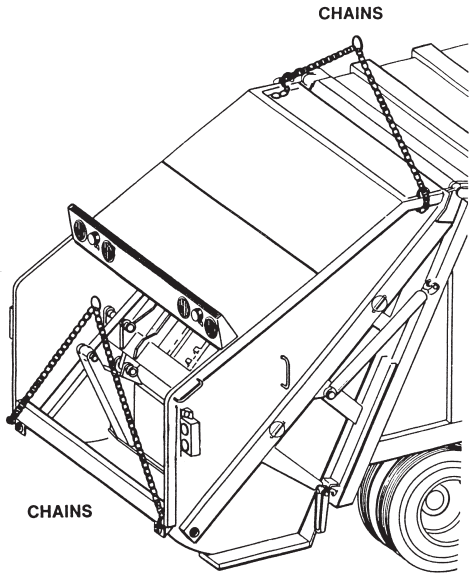
OPERATIONAL STATUS	
Truck Off	Keys Removed

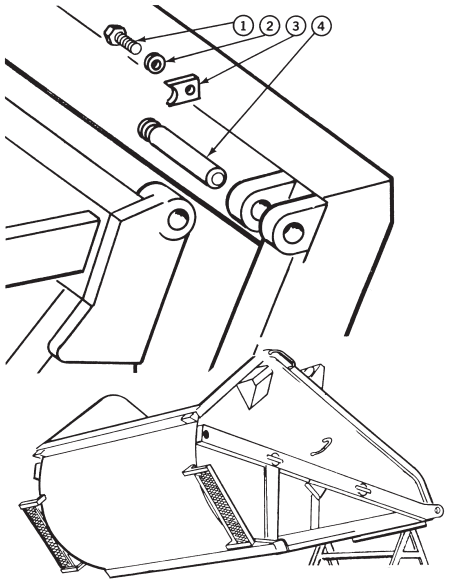
1. Release the tailgate clamps.
2. Disconnect and remove the tailgate lift cylinders as described earlier in this section.
3. Disconnect and cap the hydraulic lines.
4. Disconnect the electrical conduit and wires from the junction box on the tailgate.

NOTE

See Sec. 4, GENERAL REPAIR PRACTICES, for more detailed information about the correct use of slings and lifting chains.

5. Attach chains, connected to a suitable lifting device with a minimum lifting capacity of 7,500 lbs. to the tailgate as shown. Operate the lifting device no more than necessary to support the weight of the tailgate.
6. Remove the capscrew (1), lockwasher (2), retainer (3) and hinge pin (4).
7. Operate the lifting device and/or move the truck to free the tailgate from the body.
8. Position the tailgate on supports if needed to facilitate repairs. Supports must be capable of supporting a minimum of 7,500 lbs.

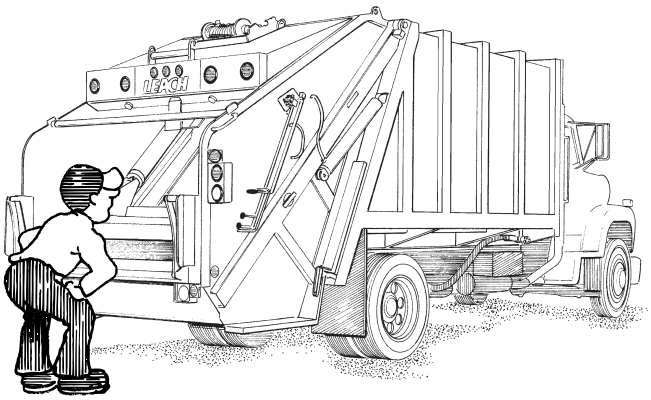




SERVICE AND REPAIR

INSPECTION AND REPLACEMENT OF TAILGATE

OPERATIONAL STATUS	
Truck Off	Keys Removed



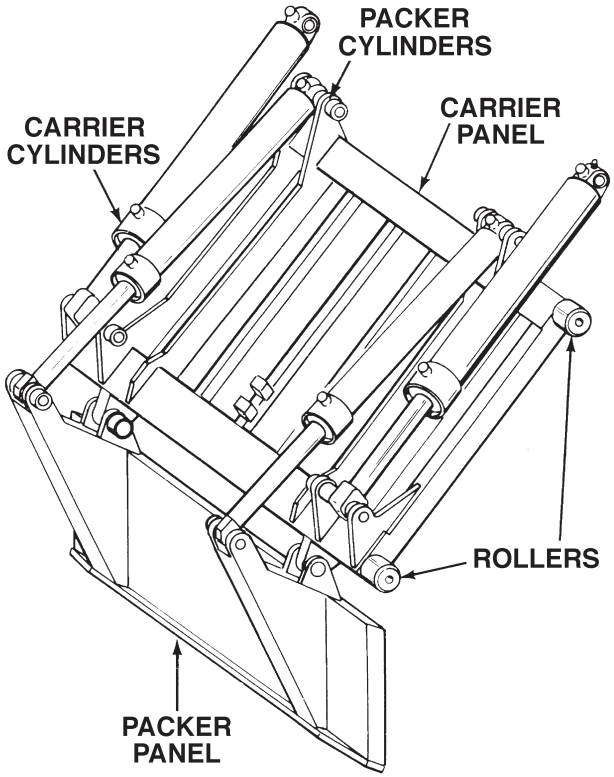
1. Inspect all sheet metal for badly bent or dented conditions. Check the hardware holes for enlargement or breaks in the metal. Check threaded holes for stripped or otherwise damaged threads. Check the rubber seal for any sign of deterioration. Check handles for looseness.
2. Replace any defective part. Follow all safety precautions pertaining to welding described in Sec. 4, GENERAL REPAIR SAFETY PRECAUTIONS.
3. See Sec. 4, GENERAL REPAIR INSTRUCTIONS for information pertaining to welding repairs.

REASSEMBLY AND INSTALLATION OF TAILGATE

Reassemble and install the tailgate in the approximate reverse order of disassembly and removal.

DESCRIPTION OF CARRIER AND PACKER PANELS

The carrier and packer panels operate as a single unit to sweep refuse from the hopper and pack it against the pushout plate. Their movement through the different cycles is controlled by the operating cylinders. Movement of the panels within the body is kept in alignment by the roller assemblies, located at each corner of the carrier panel. The rollers ride inside a track channel on each side of the tailgate.

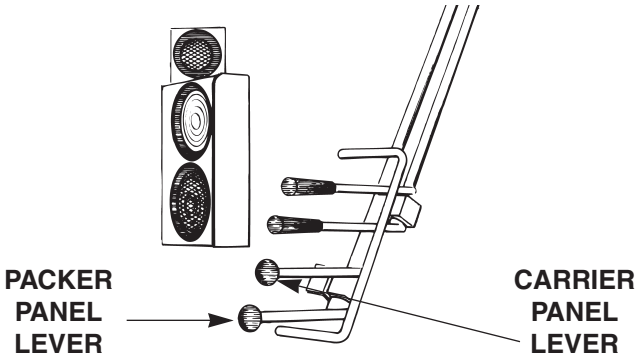


REMOVAL OF PACKER PANEL

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

1. Position the packer panel at the interrupted cycle position.

2. Move the packer panel lever upward until the packer plate reaches a vertical position. This will take the pressure off the rod eye when the pin is removed.



OPERATIONAL STATUS	
Truck Off	Keys Removed

3. Remove the locknut and capscrew from the rod end of both packer cylinders.

4. Secure a nylon sling around the cylinder and attach to a suitable lifting device with a minimum 500 lb. lifting capacity. Make sure the cylinder weight is securely supported and carefully remove the cylinder rod pin.

5. After both cylinders have been disconnected, attach a chain connected to a suitable lifting device, with a minimum lifting capacity of 1600 lbs., to the packer panel as shown. Operate the lifting device to support the weight of the packer panel without causing strain on the bearing or roller assemblies.

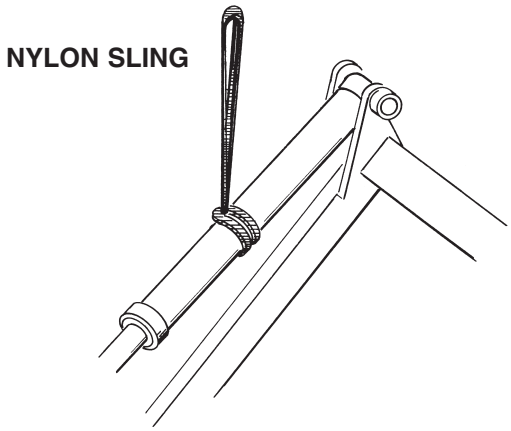
6. Remove the roll pins and washers from the packer panel pivot pins.

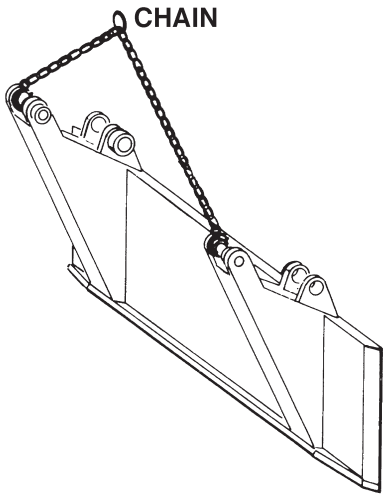
⚠WARNING

Remain clear of packer panel when removing pivot pins.

7. Remove the pivot pins.

8. With the pivot pins removed, carefully operate the hoist and lift the packer panel out of the hopper. Use care to avoid damaging the hopper.





NOTE

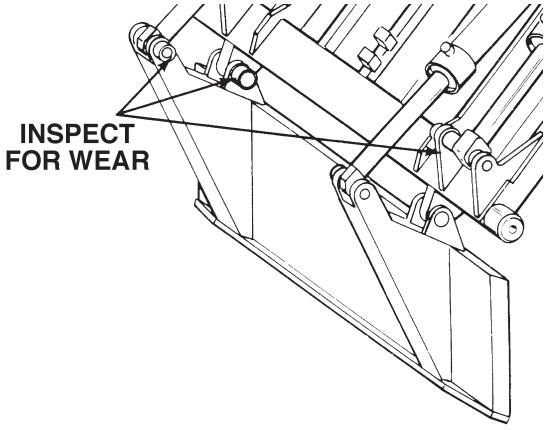
See Sec. 4, GENERAL REPAIR PRACTICES, for more detailed information about the correct use of slings and lifting chains.

SERVICE AND REPAIR

INSPECTION AND REPLACEMENT OF PACKER PANEL

OPERATIONAL STATUS	
Truck Off	Keys Removed

1. Carefully inspect all pivot areas for excessive or uneven wear, scoring or other damage.
2. Check the plate for broken welds, bent edges or warpage.
3. Inspect the edge for damage. Replace a badly worn edge as described below.
4. Replace parts as necessary. (See Sec. 4, GENERAL REPAIR INSTRUCTIONS).



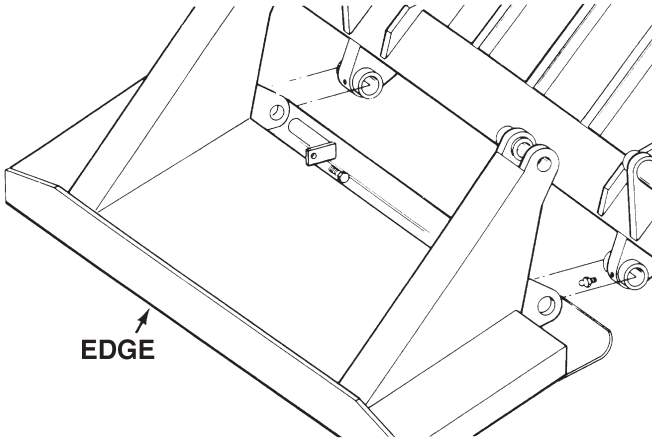
REPLACEMENT OF PACKER PANEL EDGE

OPERATIONAL STATUS	
Truck Off	Keys Removed

1. Remove the old edge with an Air Arc to obtain a clean cut.
2. Smooth the edge of the packer panel where the new edge will be attached.
3. Weld a new edge in place.

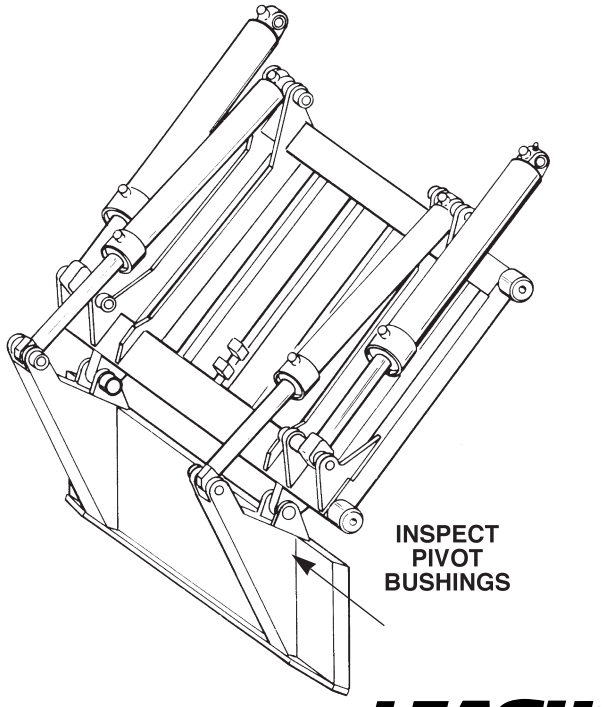
NOTE

See Sec. 4, GENERAL REPAIR PRACTICES, for more detailed information about the correct use of slings and lifting chains.



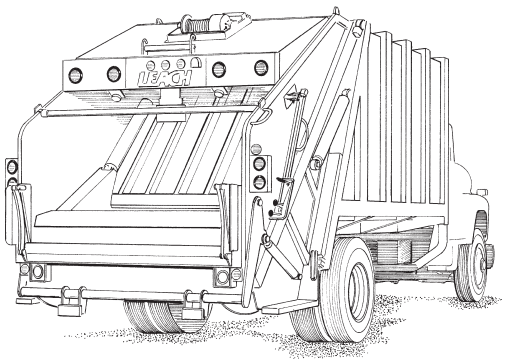
INSTALLATION OF PACKER PANEL

Install the packer panel in the approximate reverse order of disassembly. Prior to installation, inspect the pivot bushings in the carrier panel and replace if worn.



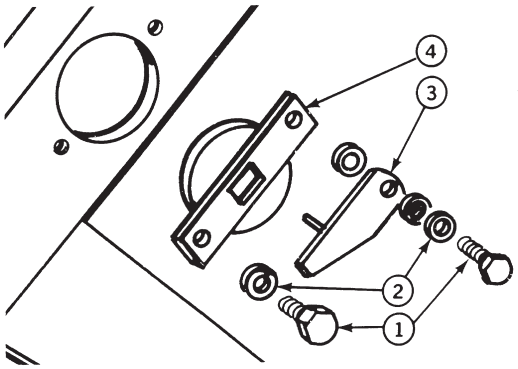
ROLLER REPLACEMENT/SHIMMING

1. Shift the operating control levers and cycle the unit several times while observing the rollers and action of the packer and carrier panels. Watch for sideways movement or twisting to determine where shimming and/or new rollers may be needed.



OPERATIONAL STATUS	
Truck Off	Keys Removed

2. Remove the capscrews (1), lockwashers (2), cover (3) and cover weldment (4) for the track hole of the roller or rollers to be removed.



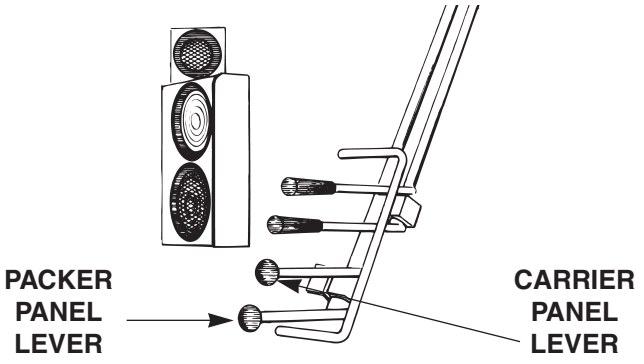
OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. Off

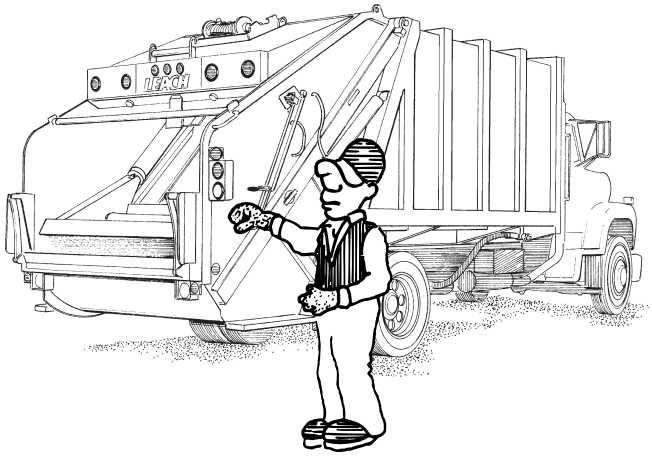
3. Shift the operating control levers and cycle the panels as necessary to align the upper and lower roller assemblies with the track holes.

NOTES

If the top roller is removed, first place a wedge between the carrier panel and the partition sheet to take the weight off of the roller assemblies.

If the bottom roller is removed, support the carrier and packer panel assembly before removing the roller.



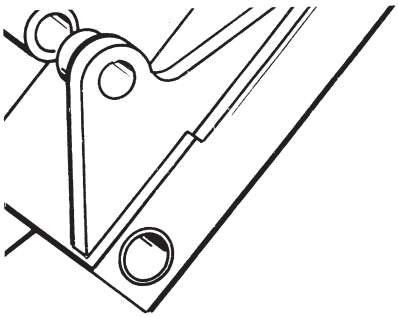


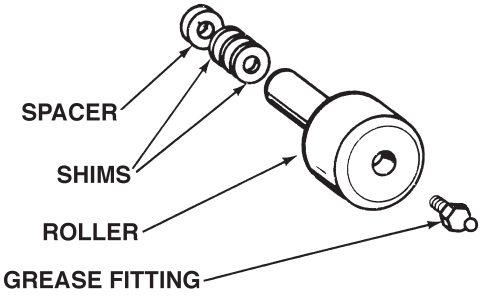
OPERATIONAL STATUS	
Truck Off	Keys Removed

4. Remove one roller and shaft assembly at a time.

5. Replace any roller that is excessively worn, cracked or out of round. Inspect the condition of the track bar. Replace if necessary.

6. Install a grease fitting in roller and the original shims or the same amount of new shims as removed.





OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. Off

7. Repeat step 1 to determine if additional shims are required.

⚠CAUTION

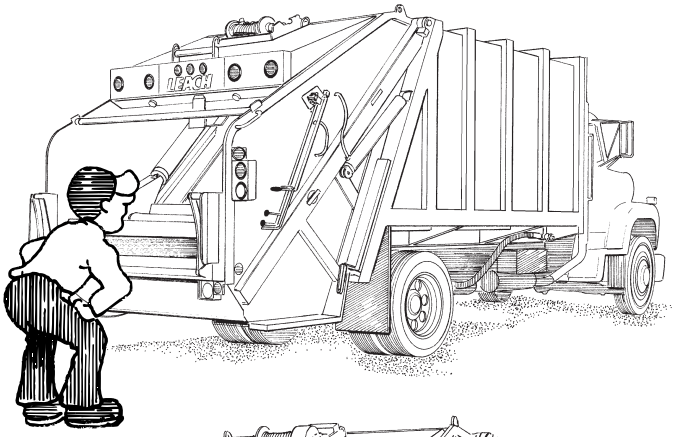
Do not over shim rollers. Excessive shimming may damage tailgate walls or wear the track channels.

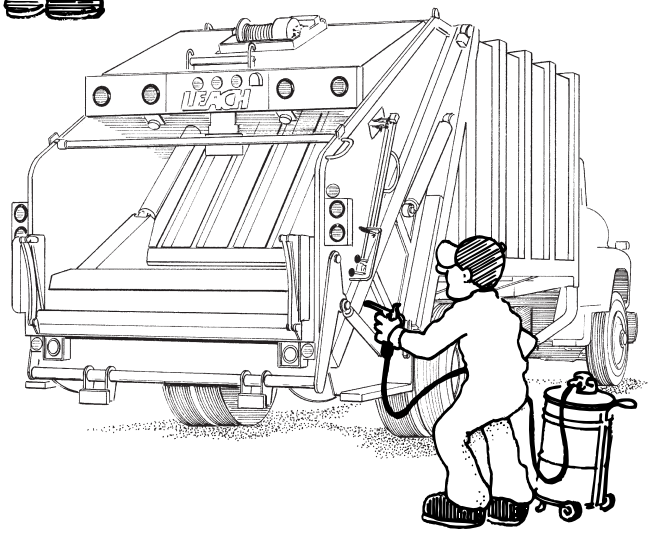
OPERATIONAL STATUS	
Truck Off	Keys Removed

8. Remove the appropriate rollers and adjust the shims as required to obtain a smooth operating carrier panel. (This may require adding or removing shims and operating the packing lever several times until the correct alignment is achieved.)

9. Reinstall the track hole covers in the reverse order of removal.

10. Once the alignment is correct, lubricate each roller as described in the LUBRICATION CHART, Sec. 6, PREVENTIVE MAINTENANCE.





REMOVAL OF CARRIER PANEL

NOTE

Remove the packer panel and four operating cylinders as described earlier in this section.

OPERATIONAL STATUS	
Truck Off	Keys Removed

1. Attach a chain, connected to a suitable lifting device with a minimum lifting capacity of 1600 lbs. to the upper and lower end of the carrier plate, as shown.

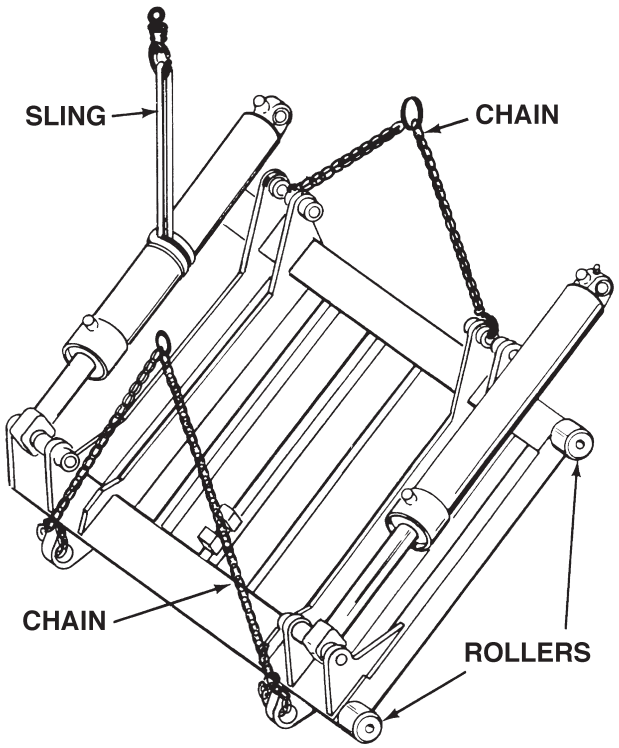
2. Remove the rollers as described later in this section.

3. Lower the carrier panel into the tailgate hopper and disconnect the chains.

NOTE

See Sec. 4, GENERAL REPAIR PRACTICES, for more detailed information about the correct use of slings and lifting chains.

4. Remove the tailgate as described earlier in this section. Once the tailgate is removed, the carrier panel can be supported ore removed as necessary for repair.



TRACK BAR REPLACEMENT

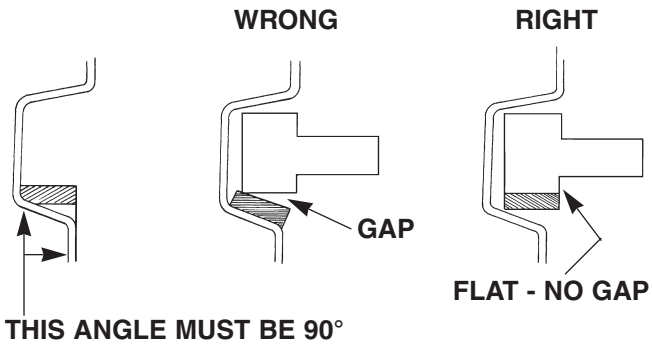
Refer to Sec. 4, GENERAL REPAIR INSTRUCTIONS for welding instructions.

1. Remove the old track bar and make sure the track channel is smooth and clean.

⚠CAUTION

The Leach track bar is made out of special alloy bar steel. Do not substitute a different steel. It may cause damage to the tailgate.

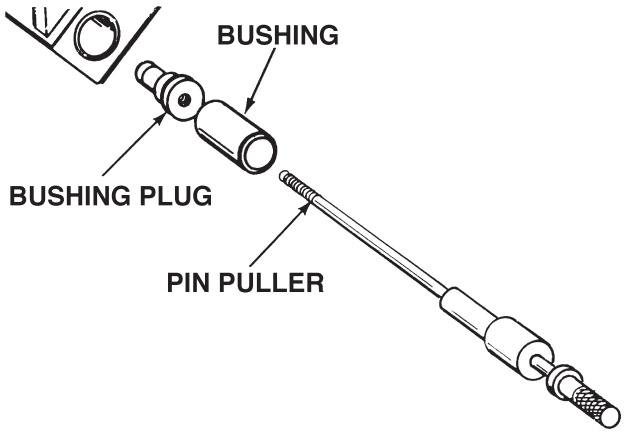
2. Weld the new track bar into place. The surface of the track bar must be 90° from the side of the tailgate so the roller will run true.

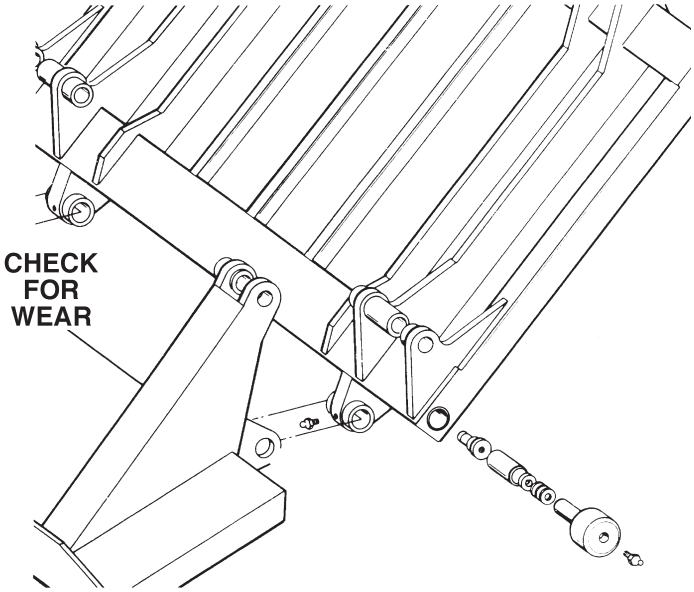


INSPECTION AND REPLACEMENT OF CARRIER PANEL

OPERATIONAL STATUS	
Truck Off	Keys Removed

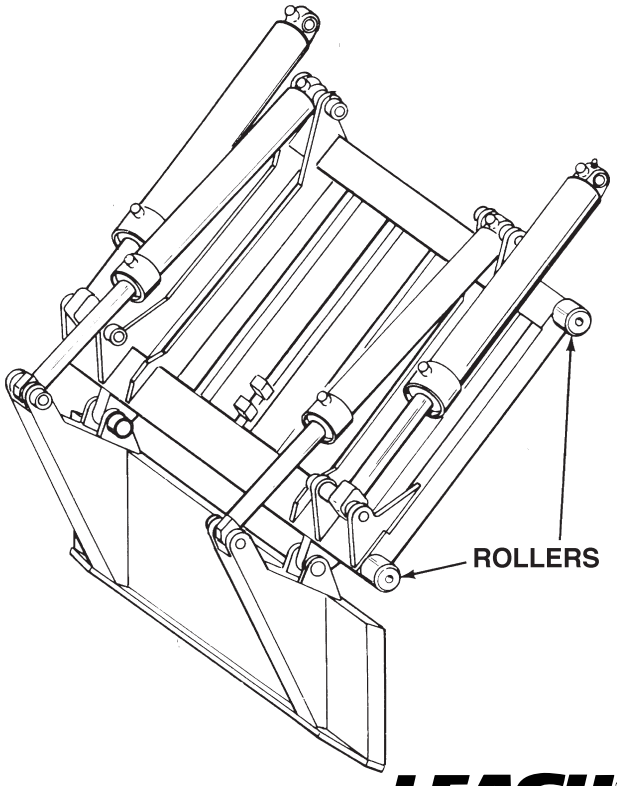
1. Carefully inspect all pivot, bearing and roller surfaces for excessive or uneven wear, scoring or damage.
2. Check the panel for broken welds, bent edges or warpage.
3. Inspect the tailgate channel track bars for excessive wear or damage.
4. Replace parts as necessary.
5. The roller shaft bushings may be removed using a pin puller (See Sec. 10, SERVICE TOOLS) which screws in the bushing plug.





INSTALLATION OF CARRIER PANEL

Install the carrier panel in the approximate reverse order of disassembly. Pay particular attention to the installation of the roller and bearing assemblies as described earlier in this section.

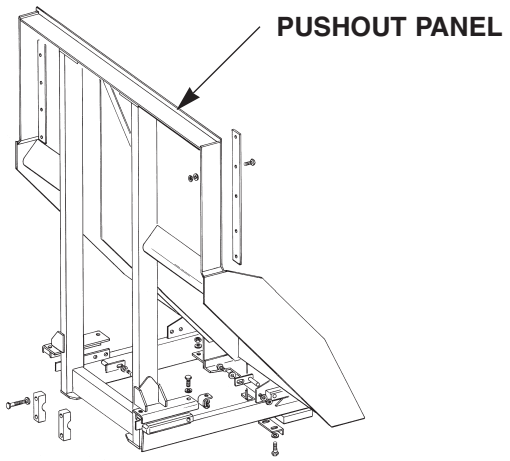


DESCRIPTION OF PUSHOUT PANEL

The pushout panel is connected to, and controlled by, the pushout cylinder. Refuse is packed against the pushout panel during loading. During unloading the pushout panel ejects the load as the pushout cylinder is extended.

The pushout panel will travel the entire length of the body. At the end of the extension stroke the load is completely ejected.

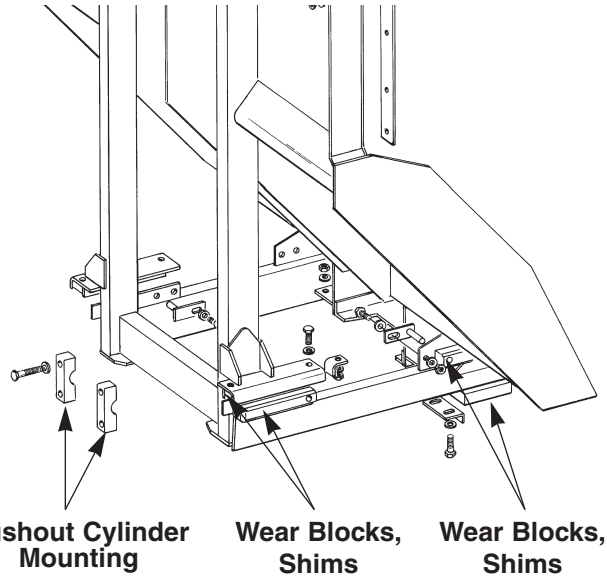
During its movement through the body the pushout panel rides in a trough. Its sideways movement is minimized by replaceable wear blocks.



INSPECTION AND REPLACEMENT OF WEAR BLOCKS

OPERATIONAL STATUS	
Truck Off	Keys Removed

1. Inspect the wear blocks for wear. Replace worn parts.

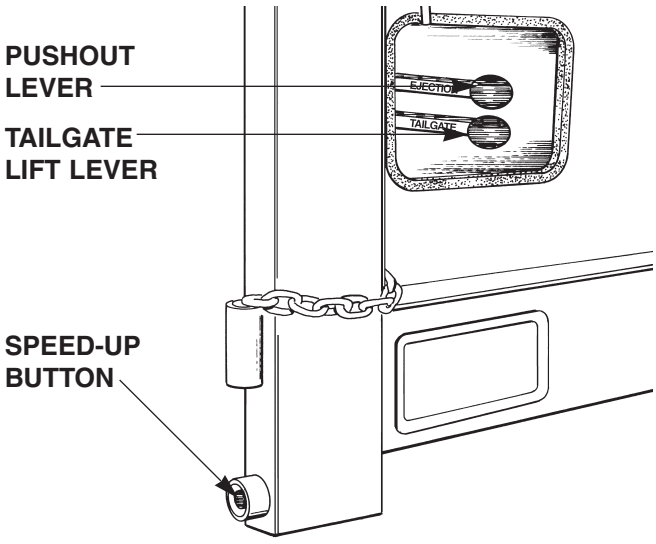


SHIMMING WEAR BLOCKS WITH PANEL IN PLACE

Shims can be added to the wear blocks without removing the pushout panel as follows:

OPERATIONAL STATUS	
Truck Off	Keys Removed

1. Remove attachment bolts and pins for wear blocks.
2. Pry pushout panel to one side.
3. Add shims behind the wear block.
4. Repeat procedure for other side.
5. Install attachment bolts and pins. Tighten securely.



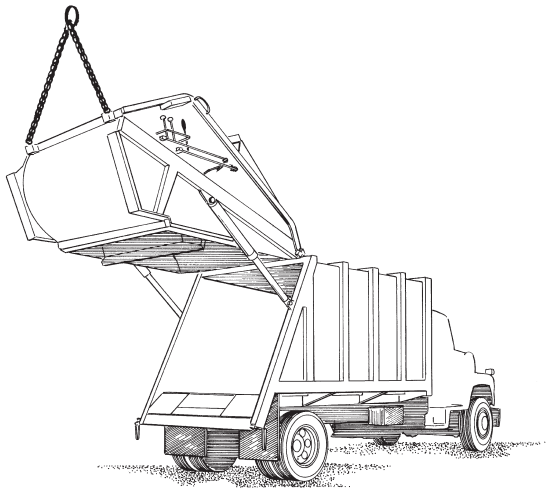
REMOVAL OF PUSHOUT PANEL

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

1. Remove the pushout lever and position the pushout panel at the extreme rear of the body.
2. Pull the tailgate lift lever to raise the tailgate.

OPERATIONAL STATUS	
Truck Off	Keys Removed

3. Support the tailgate from an overhead hoist or crane with a minimum lifting capacity of 7500 lbs.



⚠CAUTION

Loosen the hydraulic fittings slowly to release the pressure.

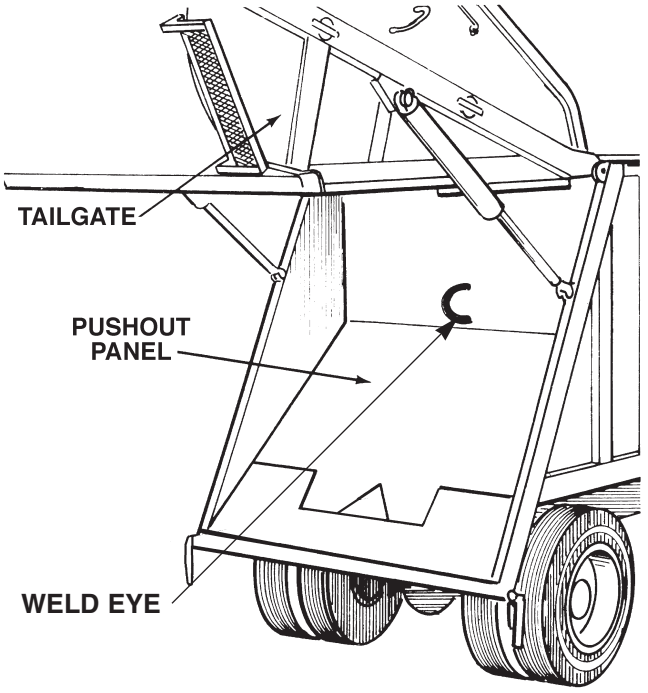
4. Disconnect the pushout cylinder from the pushout panel by removing the four (2) bolts in each of the saddle bearings.

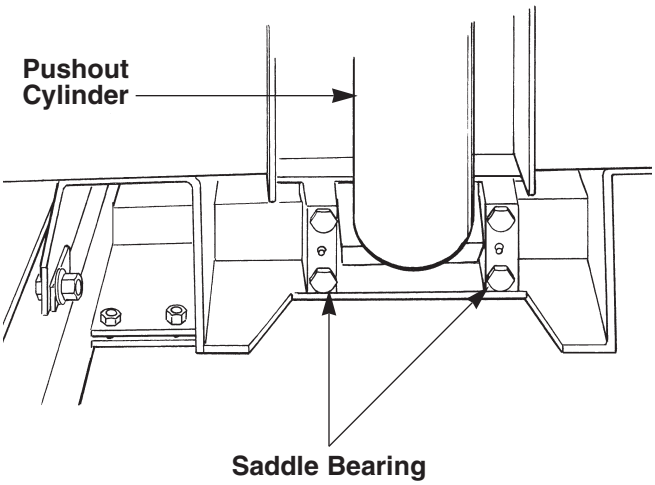
NOTE

Be careful not to damage the pushout cylinder during removal of the pushout panel.

5. Weld an eye to the center of the panel and attach a chain to prevent the panel from tipping over upon removal.

6. The pushout panel can now be removed from the body. The method of removal will depend on the equipment available. Whatever method is used, the equipment must be capable of lifting a minimum of 2800 lbs. and the panel should be secured safely to the removal device.



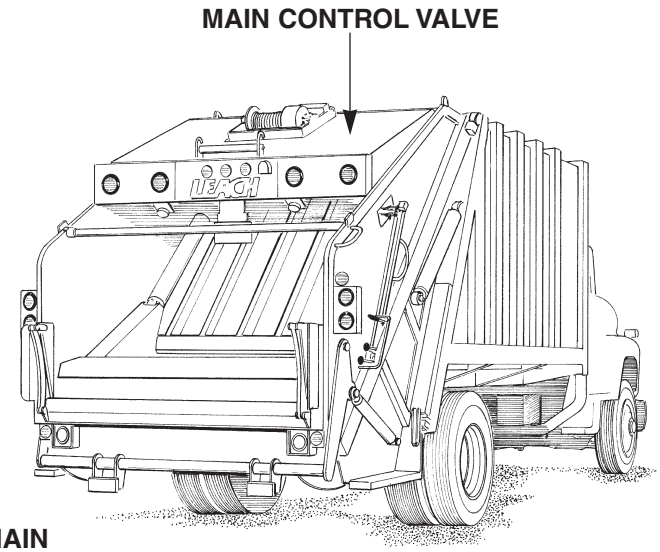


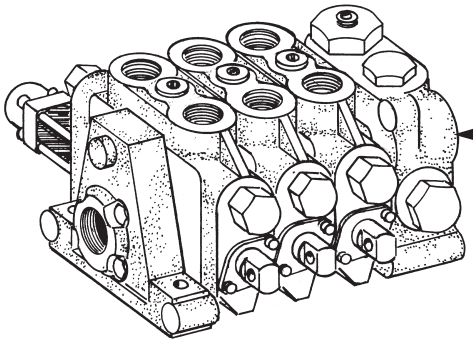
INSTALLATION OF PUSHOUT PANEL

Install the pushout panel in the reverse order of removal.

MAIN CONTROL VALVE

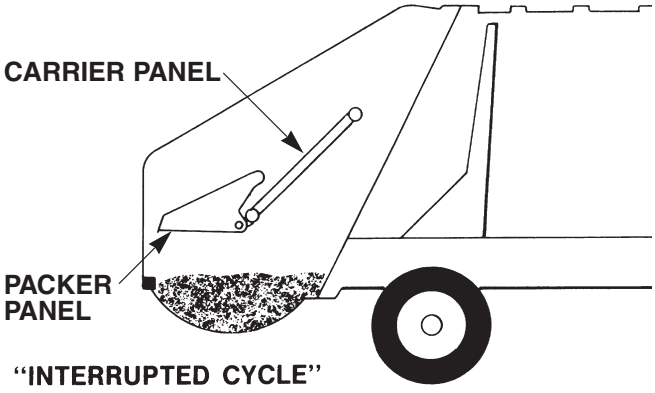
The main control valve is located on the tailgate above the packer and carrier panels. The valve controls the operation of the packer and carrier panels through the entire packing cycle. It may have additional valve sections, depending on the installation of options.



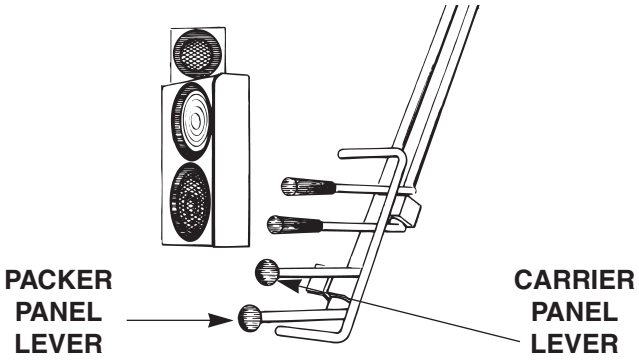


REMOVAL OF THE MAIN CONTROL VALVE

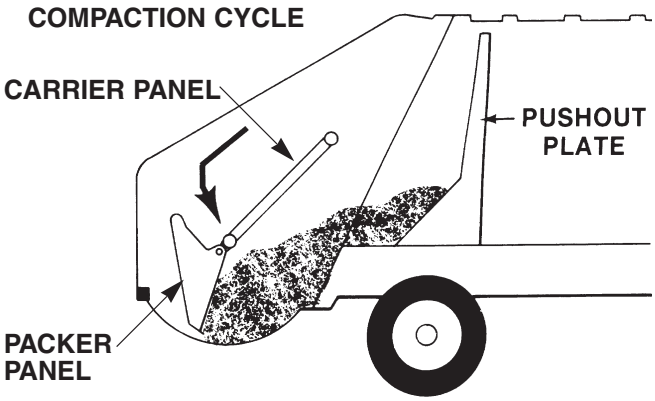
1. Place the packer and carrier panels in the “interrupted cycle” position.



2. Move the packer panel control lever outward to sweep the packer panel through the hopper toward the home position. Stop the movement of the panel (move the control lever to the neutral position) when the panel becomes vertical (straight up and down).



3. Turn off the engine, remove the keys.



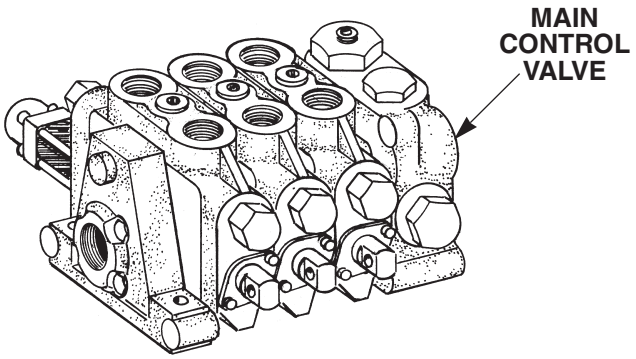
4. Disconnect the shift linkage.

5. Disconnect and cap all hydraulic lines and hoses.

6. Plug all open ports on the valve to prevent contamination.

NOTE:

The valve assembly and bracket weigh approximately 100 lbs. Use appropriate lifting procedures and techniques when handling this assembly.



7. Remove the capscrews, washers and nuts holding the valve bracket to the tailgate.

DISASSEMBLY AND INSPECTION OF MAIN CONTROL VALVE

1. Wash the valve body with solvent to prevent contamination.

NOTE:

Before disassembly, it is suggested that each work section be marked numerically to avoid incorrect assembly.

2. To separate valve sections from inlet or outlet covers, remove the four (4) tie bolts which secure the valve sections and overs. Separate carefully, noting the location of o-ring seals.

3. Thoroughly clean the o-ring counter bores and ground surfaces of each section.

REASSEMBLY OF MAIN CONTROL VALVE

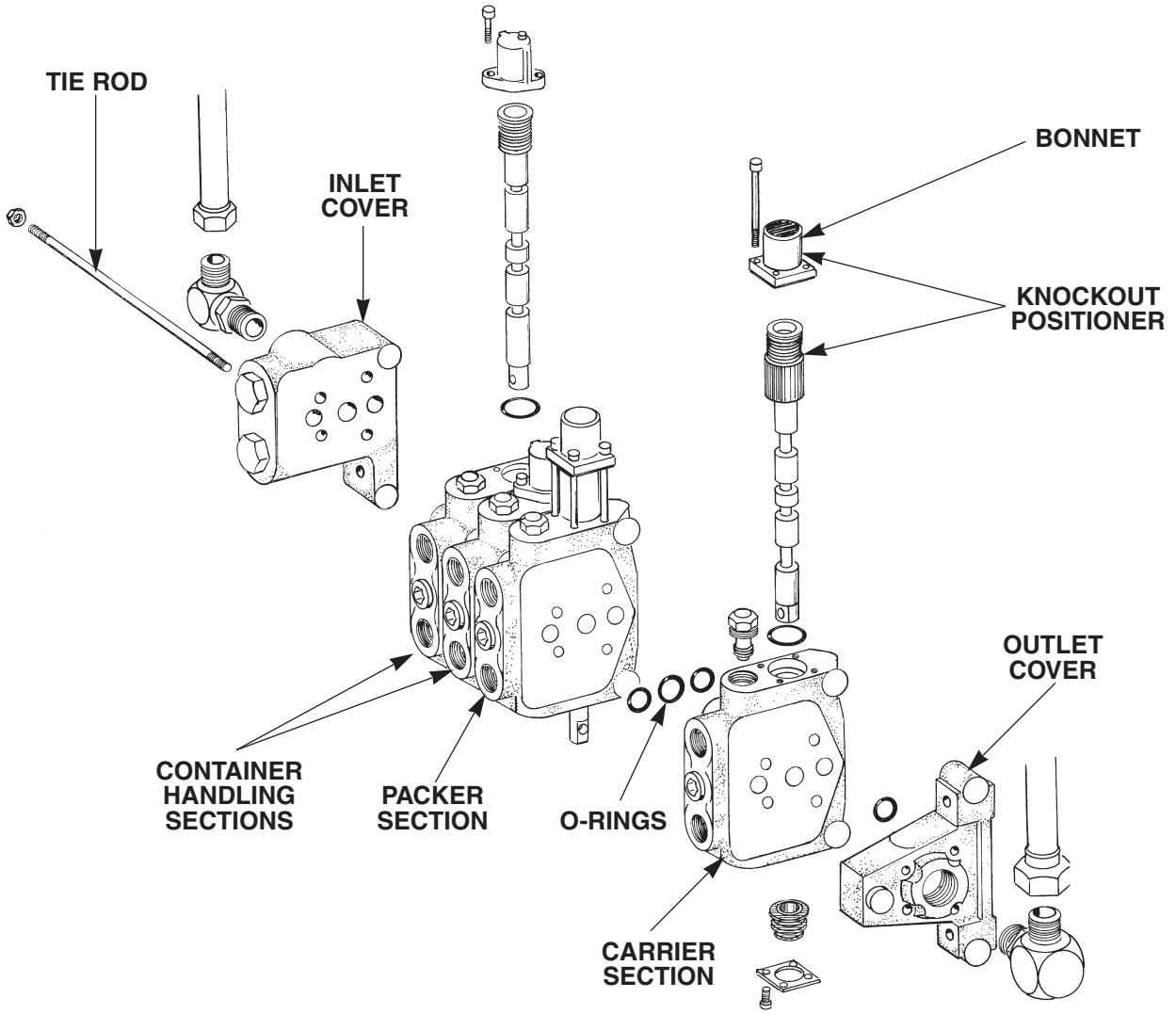
1. Replace work sections and covers with the tie bolts in the same order in which they were removed.

NOTE:

Use care in replacing the work section to avoid dislodging o-rings from the counterbores.

2. Secure tie bolts and tighten evenly to 25 ft. lbs. (33.8Nm).

3. Torque the 3500 lb relief cartridge, load check and blanking plugs to 20 ft. lbs. (27 Nm).



DISASSEMBLY AND INSPECTION OF THE KNOCKOUT POSITIONER

1. To remove the knockout positioner, remove the four bonnet capscrews (2) and bonnet (3).
2. Using a 5/16" allen wrench remove the spool collar (6). If the control rod assembly is not installed on the spool end it may be necessary to insert a rod through the spool clevis to keep the spool from rotating when removing the spool collar.

⚠CAUTION

The spool collar is under spring tension and caution should be used when removing.

NOTE:

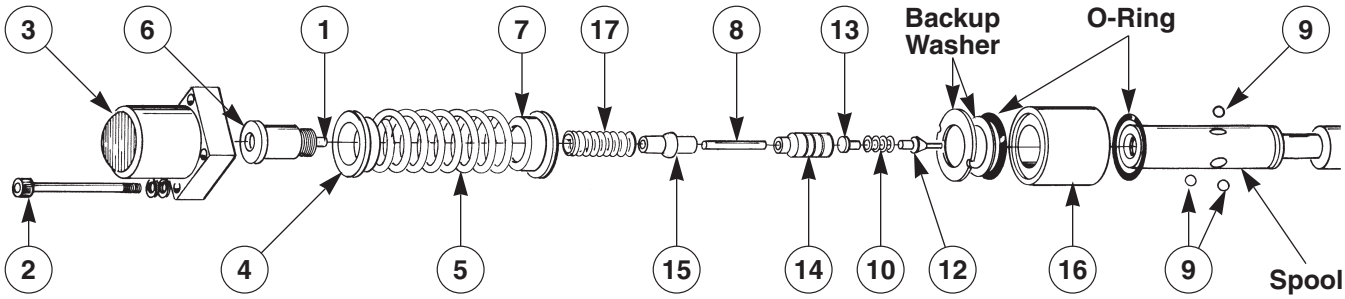
It may be necessary to turn the pressure adjustment screw (1) clockwise until it is recessed far enough to allow removal of the spool collar.

3. Remove outer spool collar (4), spool centering spring (5) and inner spool collar (7).
4. Carefully slide the detent sleeve assembly (16) off the spool. The detent balls (9) will be free to fall out when the sleeve is slid off.
5. Remove spring (17), KO ramp (15), dowel pin (8), piston (14), spring pad (13), inner spring (10) and KO poppet (12).
6. Remove o-ring from counter bore of valve body.
7. Remove the four (4) capscrews which secure the linkage side cover bracket to the valve body work section.
8. Remove retainer plate, retainer plate washer and o-ring seal.

⚠CAUTION

Do not remove the valve spool as the seals can be replaced externally.

9. The removal of the 3500 lb. relief valve, load check and blanking plug are taken off as assemblies and repairs are limited to o-ring replacement or complete cartridge assembly.

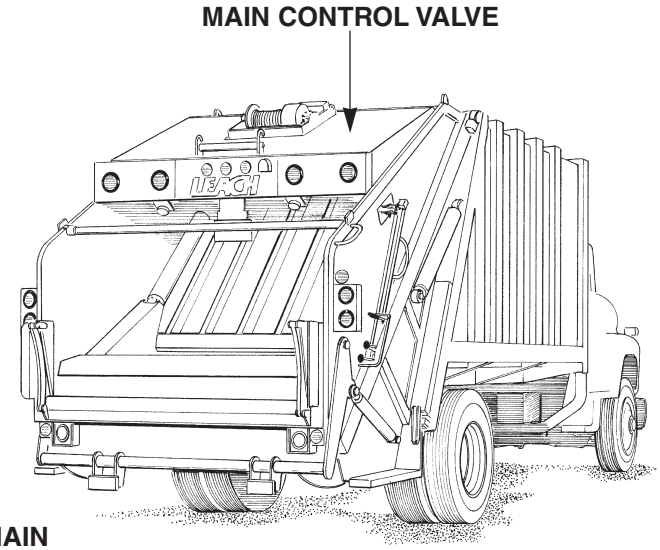


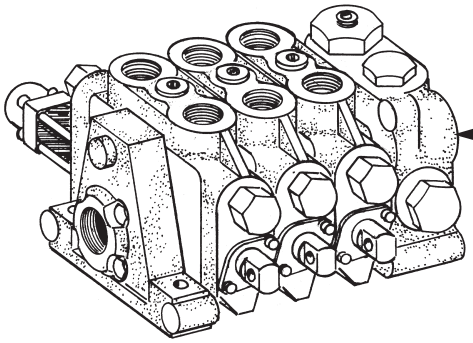
REASSEMBLY OF KNOCKOUT POSITIONER

1. With all o-ring seals removed and counterbores thoroughly clean, lightly oil the new seals. Slide over the valve spools and insert in the seal counterbores.
2. Replace all seals in the knockout position prior to reassembly.
3. Apply a liberal amount of general purpose grease to the spring pad (13), inner spring (10) and the KO poppet (12) and insert these parts into the piston (14). Slide this assembly into the end of the valve spool and push into place.
4. Insert the dowel pin (8) and slide (17) over end of the KO ramp (15). Insert this assembly into the end of the valve spool and push into place.
5. Apply a liberal amount of general purpose grease into the detent ball holes (9) in the valve spool and push into place.
6. Insert one detent ball (9) into each hole and carefully slide the detent sleeve assembly (16), including the seals and retainers, over the valve spool into place next to the valve housing.
7. Insert the adjustment screw (1) into the spool collar (6) from the inside and turn a few revolutions. Do not turn the adjustment screws in too far or it will interfere with installation of the spool collar.
8. Slide inner spring collar (7), centering spring (5), and outer spring collar (4) onto end of valve spool. While holding in place, screw the spool collar (6) into the spool end.
9. Torque the spool collar (6) to 10 - 12 ft. lbs. [13,6 - 16,3 Nm]
10. Reassemble parts in reverse order of disassembly.
11. Torque the bonnet screws and linkage end bracket to 60 in. lbs. (6.75 Nm).

MAIN CONTROL VALVE

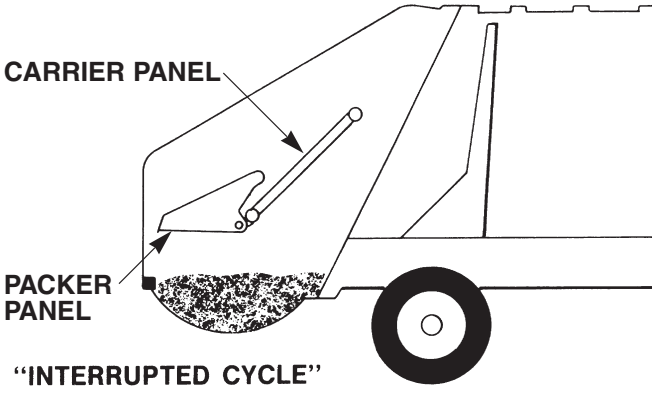
The main control valve is located on the tailgate above the packer and carrier panels. The valve controls the operation of the packer and carrier panels through the entire packing cycle. It may have additional valve sections, depending on the installation of options.



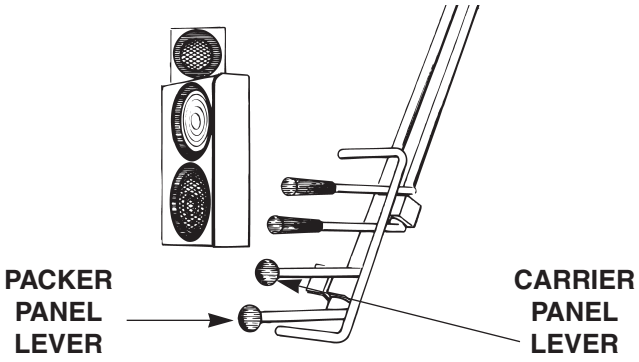


REMOVAL OF THE MAIN CONTROL VALVE

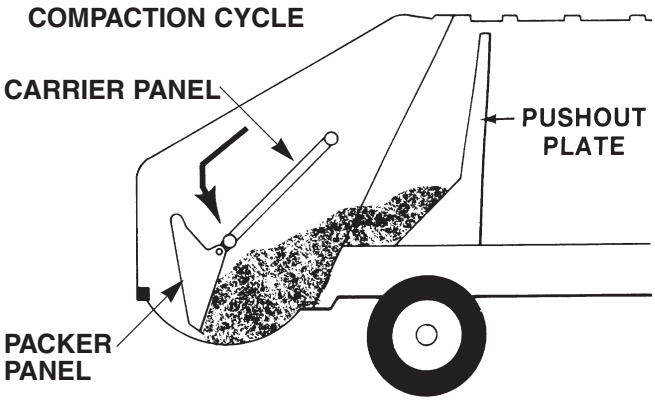
1. Place the packer and carrier panels in the “interrupted cycle” position.



2. Move the packer panel control lever outward to sweep the packer panel through the hopper toward the home position. Stop the movement of the panel (move the control lever to the neutral position) when the panel becomes vertical (straight up and down).



3. Turn off the engine, remove the keys.



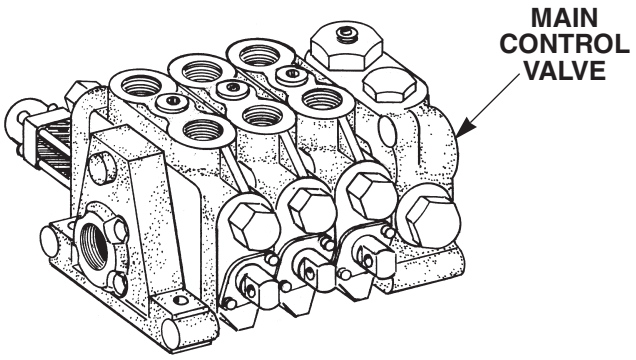
4. Disconnect the shift linkage.

5. Disconnect and cap all hydraulic lines and hoses.

6. Plug all open ports on the valve to prevent contamination.

NOTE:

The valve assembly and bracket weigh approximately 100 lbs. Use appropriate lifting procedures and techniques when handling this assembly.



7. Remove the capscrews, washers and nuts holding the valve bracket to the tailgate.

DISASSEMBLY AND INSPECTION OF MAIN CONTROL VALVE

1. Wash the valve body with solvent to prevent contamination.

NOTE:

Before disassembly, it is suggested that each work section be marked numerically to avoid incorrect assembly.

2. To separate valve sections from inlet or outlet covers, remove the four (4) tie bolts which secure the valve sections and overs. Separate carefully, noting the location of o-ring seals.

3. Thoroughly clean the o-ring counter bores and ground surfaces of each section.

REASSEMBLY OF MAIN CONTROL VALVE

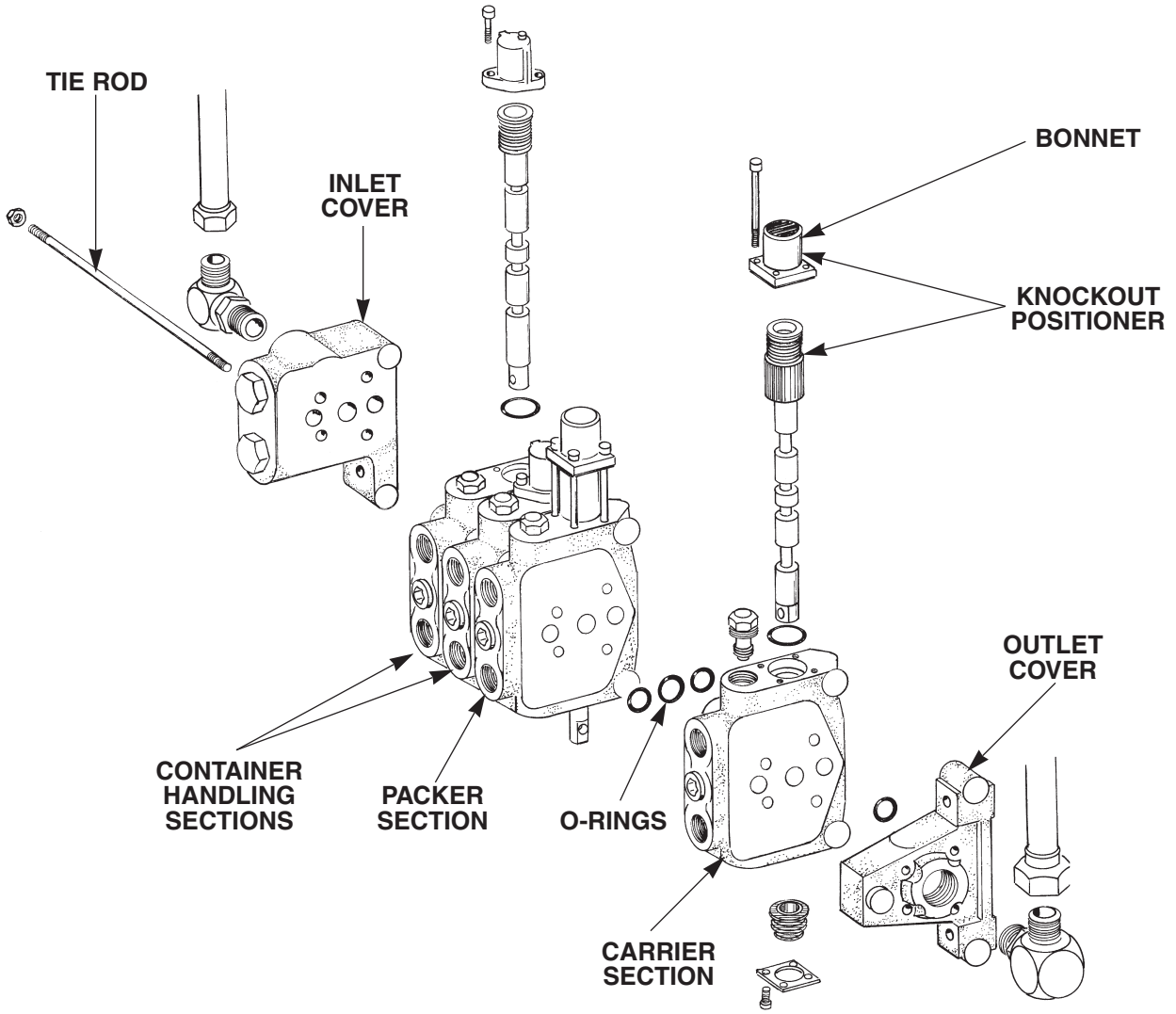
1. Replace work sections and covers with the tie bolts in the same order in which they were removed.

NOTE:

Use care in replacing the work section to avoid dislodging o-rings from the counterbores.

2. Secure tie bolts and tighten evenly to 25 ft. lbs. (33.8Nm).

3. Torque the 3500 lb relief cartridge, load check and blanking plugs to 20 ft. lbs. (27 Nm).



DISASSEMBLY AND INSPECTION OF THE KNOCKOUT POSITIONER

1. To remove the knockout positioner, remove the four bonnet capscrews (2) and bonnet (3).
2. Using a 5/16" allen wrench remove the spool collar (6). If the control rod assembly is not installed on the spool end it may be necessary to insert a rod through the spool clevis to keep the spool from rotating when removing the spool collar.

⚠CAUTION

The spool collar is under spring tension and caution should be used when removing.

NOTE:

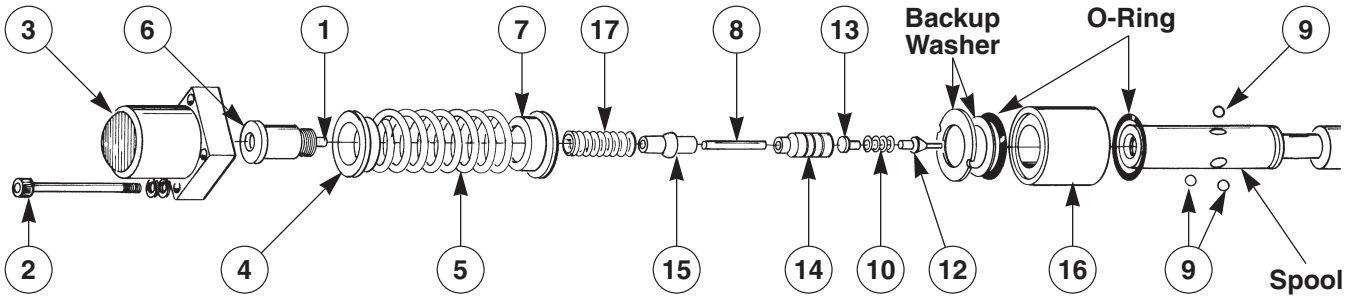
It may be necessary to turn the pressure adjustment screw (1) clockwise until it is recessed far enough to allow removal of the spool collar.

3. Remove outer spool collar (4), spool centering spring (5) and inner spool collar (7).
4. Carefully slide the detent sleeve assembly (16) off the spool. The detent balls (9) will be free to fall out when the sleeve is slid off.
5. Remove spring (17), KO ramp (15), dowel pin (8), piston (14), spring pad (13), inner spring (10) and KO poppet (12).
6. Remove o-ring from counter bore of valve body.
7. Remove the four (4) capscrews which secure the linkage side cover bracket to the valve body work section.
8. Remove retainer plate, retainer plate washer and o-ring seal.

⚠CAUTION

Do not remove the valve spool as the seals can be replaced externally.

9. The removal of the 3500 lb. relief valve, load check and blanking plug are taken off as assemblies and repairs are limited to o-ring replacement or complete cartridge assembly.

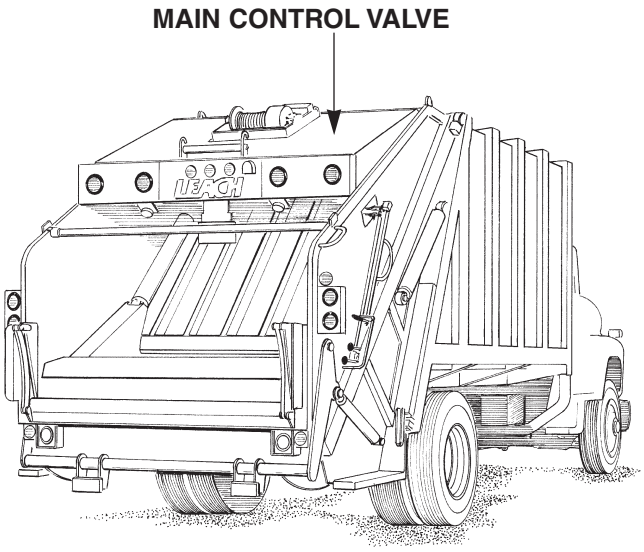


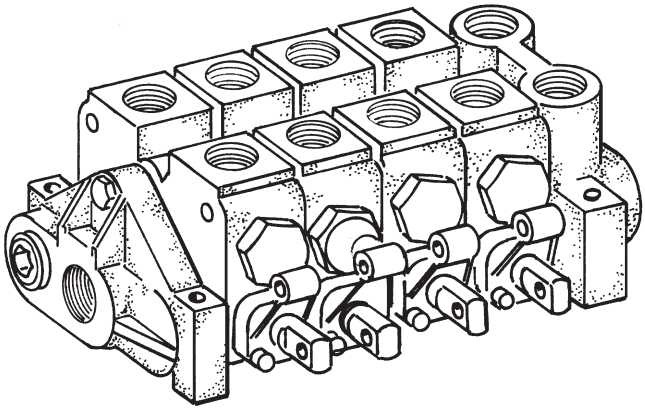
REASSEMBLY OF KNOCKOUT POSITIONER

1. With all o-ring seals removed and counterbores thoroughly clean, lightly oil the new seals. Slide over the valve spools and insert in the seal counterbores.
2. Replace all seals in the knockout position prior to reassembly.
3. Apply a liberal amount of general purpose grease to the spring pad (13), inner spring (10) and the KO poppet (12) and insert these parts into the piston (14). Slide this assembly into the end of the valve spool and push into place.
4. Insert the dowel pin (8) and slide (17) over end of the KO ramp (15). Insert this assembly into the end of the valve spool and push into place.
5. Apply a liberal amount of general purpose grease into the detent ball holes (9) in the valve spool and push into place.
6. Insert one detent ball (9) into each hole and carefully slide the detent sleeve assembly (16), including the seals and retainers, over the valve spool into place next to the valve housing.
7. Insert the adjustment screw (1) into the spool collar (6) from the inside and turn a few revolutions. Do not turn the adjustment screws in too far or it will interfere with installation of the spool collar.
8. Slide inner spring collar (7), centering spring (5), and outer spring collar (4) onto end of valve spool. While holding in place, screw the spool collar (6) into the spool end.
9. Torque the spool collar (6) to 10 - 12 ft. lbs. [13,6 - 16,3 Nm]
10. Reassemble parts in reverse order of disassembly.
11. Torque the bonnet screws and linkage end bracket to 60 in. lbs. (6.75 Nm).

MAIN CONTROL VALVE

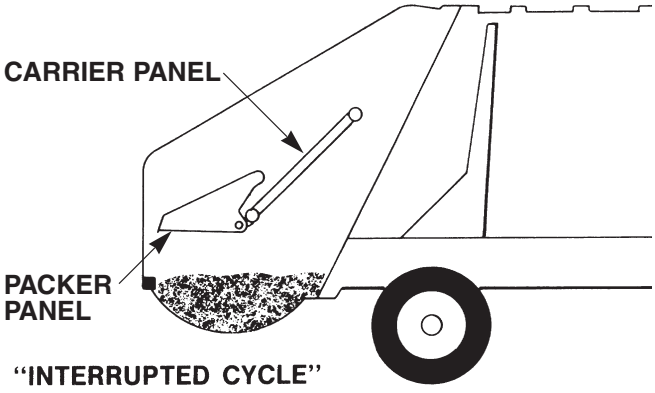
The main control valve is located on the tailgate above the packer and carrier panels. The valve controls the operation of the packer and carrier panels through the entire packing cycle. It may have additional valve sections, depending on the installation of options.



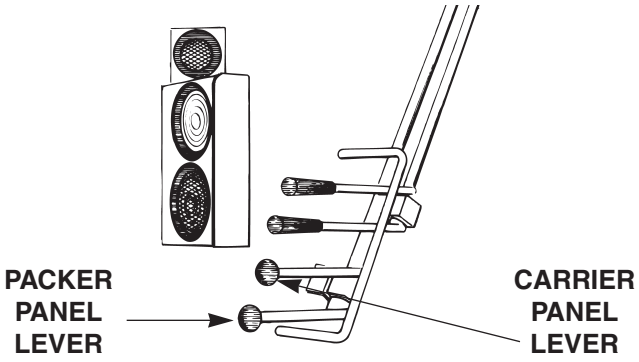


REMOVAL OF THE MAIN CONTROL VALVE

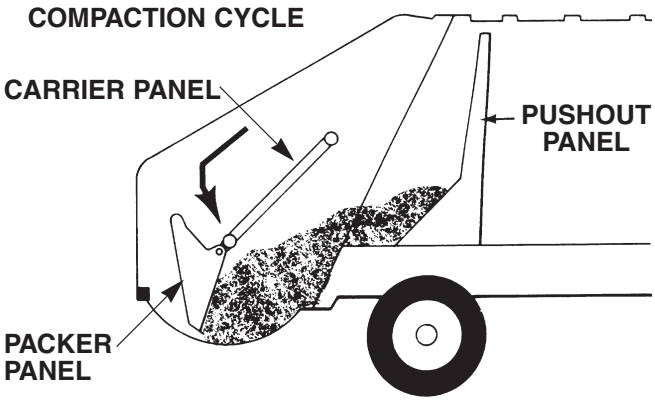
1. Place the packer and carrier panels in the “interrupted cycle” position.



2. Move the packer panel control lever outward to sweep the packer panel through the hopper toward the home position. Stop the movement of the panel (move the control lever to the neutral position) when the panel becomes vertical (straight up and down).



3. Turn off the engine, remove the keys.



4. Disconnect the shift linkage.

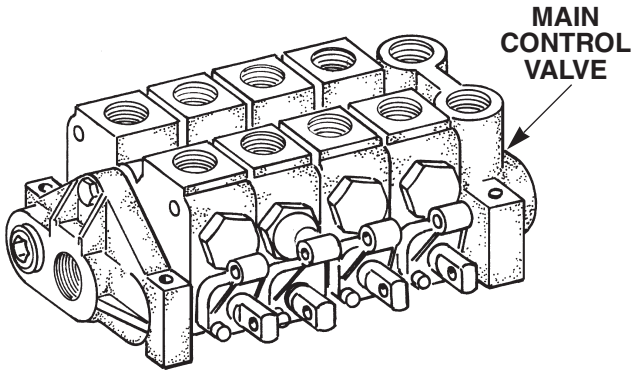
5. Disconnect and cap all hydraulic lines and hoses.

6. Plug all open ports on the valve to prevent contamination.

NOTE:

The valve assembly and bracket weigh approximately 100 lbs. Use appropriate lifting procedures and techniques when handling this assembly.

7. Remove the capscrews, washers and nuts holding the valve bracket to the tailgate.



DISASSEMBLY AND INSPECTION OF MAIN CONTROL VALVE

1. Wash the valve body with solvent to prevent contamination.

NOTE:

Before disassembly, it is suggested that each work section be marked numerically to avoid incorrect assembly.

2. To separate valve sections from inlet or outlet covers, remove the three (3) bolts which secure the valve sections and covers. Separate carefully, noting the location of o-ring seals.

3. Thoroughly clean the o-ring counter bores and ground surfaces of each section.

REASSEMBLY OF MAIN CONTROL VALVE

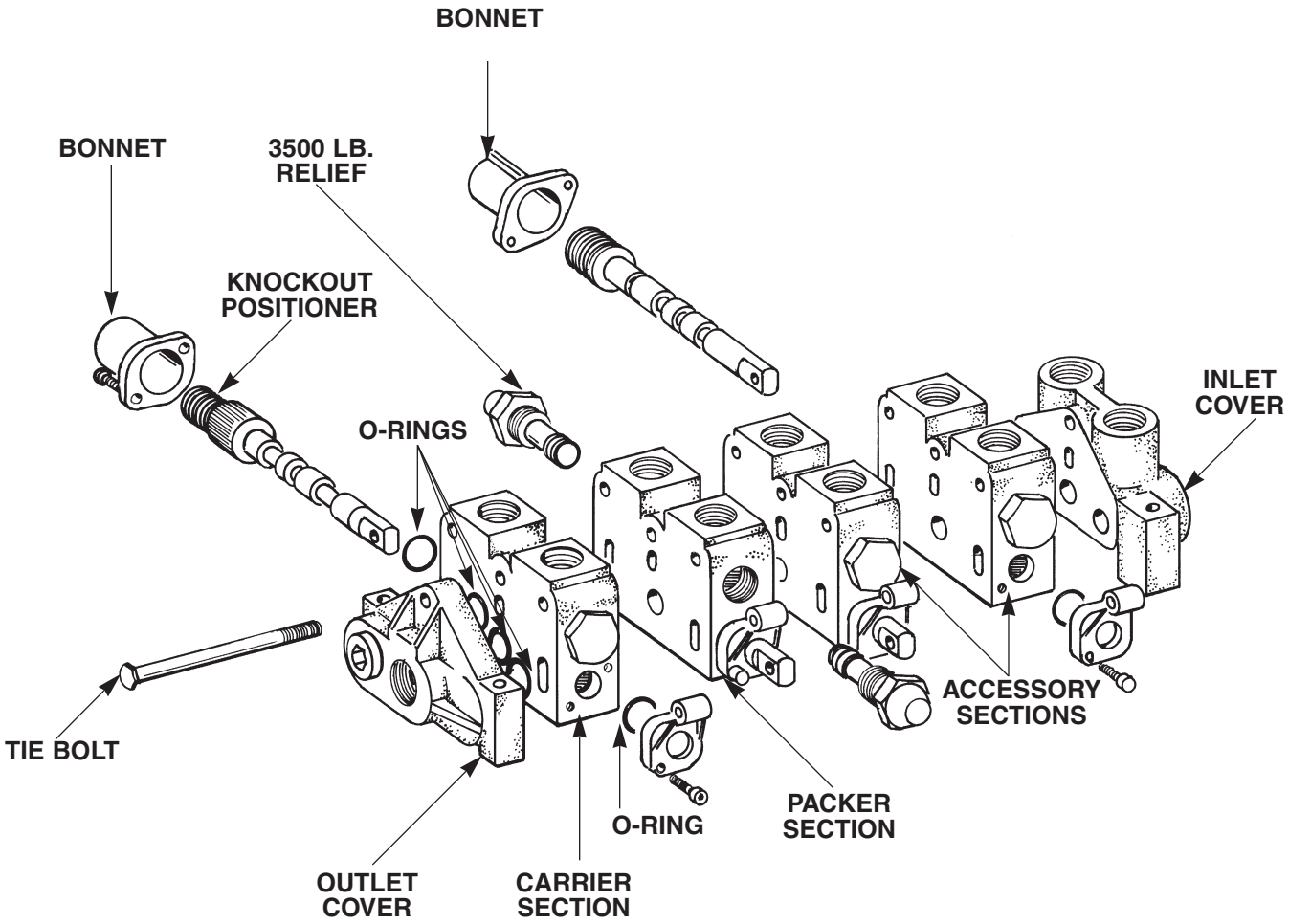
1. Replace work sections and covers with the tie bolts in the same order in which they were removed.

NOTE:

Use care in replacing the work section to avoid dislodging o-rings from the counterbores.

2. Secure tie bolts and tighten evenly to 25 ft. lbs. (33.8Nm).

3. Torque the 3500 lb relief cartridge, load check and blanking plugs to 20 ft. lbs. (27 Nm).



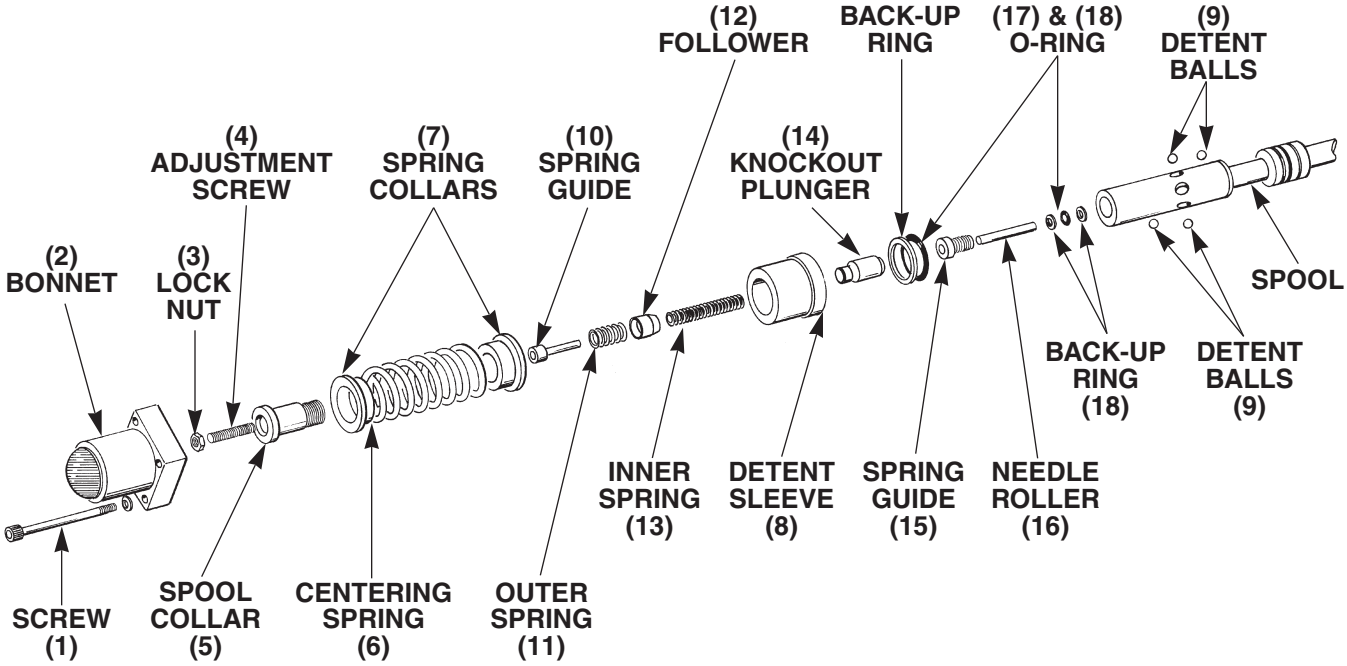
DISASSEMBLY AND INSPECTION OF KNOCKOUT POSITIONER

1. Remove bonnet screws (1) and bonnet (2).
2. Loosen locknut (3) and remove adjustment screw (4). Count and record the number of turns needed to remove.
3. Remove spool collar (5). If the control rod is not installed on the opposite spool end, it may be necessary to insert a rod through the spool clevis to keep the spool from rotating.

⚠CAUTION

The spool collar is under spring tension and caution should be used when removing.

4. Remove spring collars (7) and centering spring (6).
5. Carefully slide detent sleeve (8) off the spool. The four detent balls (9) will be free to fall out when the sleeve is removed.
6. Remove spring guide (10), outer spring (11), and follower (12).
7. Remove inner spring (13) (if used) and the knockout plunger (14).
8. Remove spring guide (15) and needle roller (16).
9. Remove back-up ring and o-ring (17). Remove back-up rings and o-ring (18).
10. Clean and inspect parts for excessive wear or scoring. Clean the o-ring counter bores. Servicing of the detent assembly is limited to o-ring and back-up washer replacement.



REASSEMBLY OF KNOCKOUT POSITIONER

1. Lightly oil and install backup rings and o-rings (18). Install needle roller (16).
2. Apply thread locking compound to threads on spring guide (15). Install spring guide (15) and torque to 5 ft. lbs. (7 Nm).
3. Install knockout plunger (14), inner spring (13) (if used), follower (12), outer spring (11), and spring guide (10).

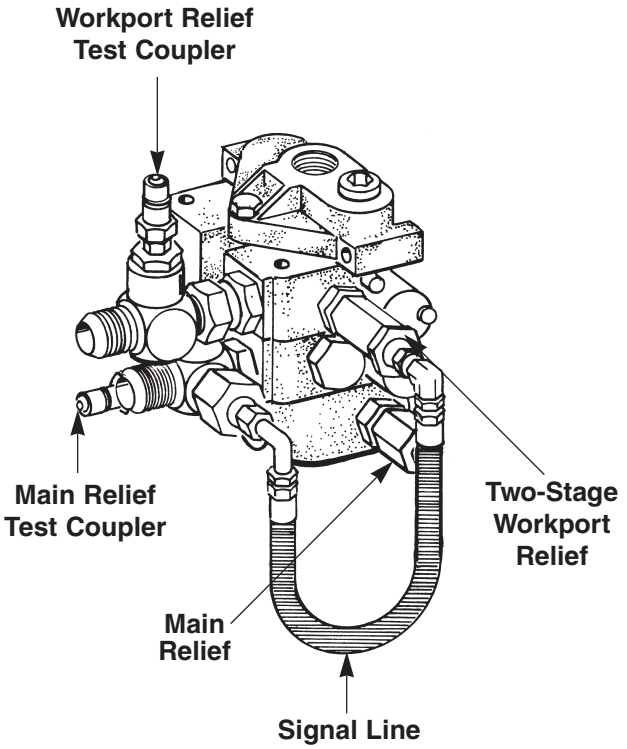
⚠CAUTION

The centering spring will have to be compressed during assembly by applying pressure to the spool collar. Caution should be used.

4. Lightly oil and install the o-ring & backup ring (17).
5. Apply a liberal amount of general purpose grease into the detent ball holes on the spool. Insert one detent ball (9) into each hole. Carefully slide detent sleeve (8) over the spool and into place.
6. Install spring collars (7) and centering spring (6). Install spool collar (5) and torque to 32 in. lbs. (3.6 Nm).
7. Install adjustment screw (4) and turn the number of turns recorded during disassembly. Install and tighten lock nut (3).
8. Install bonnet (2) and screws (1). Torque screws to 10 ft. lbs. (13.6 Nm).

FRONT CONTROL VALVE

The front control valve is located behind the access door in the front left hand side of the body. It is manually activated and controls the raising and lowering of the tailgate and the operation of the pushout panel. This valve also contains the main pressure relief for the hydraulic system.



REMOVAL OF FRONT CONTROL VALVE

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Disconnect the hydraulic lines to the valve. Cap the lines and plug the valve ports to prevent dirt from entering the valve and the hydraulic system.

2. Remove the capscrews, lockwashers, nuts and remove the valve.

DISASSEMBLY AND INSPECTION OF FRONT CONTROL VALVE

1. Wash the valve body with solvent to prevent contamination.

NOTE:

Service should be limited to seal replacement, cartridges and individual valve sections. Field repairs of the spool assemblies are not recommended.

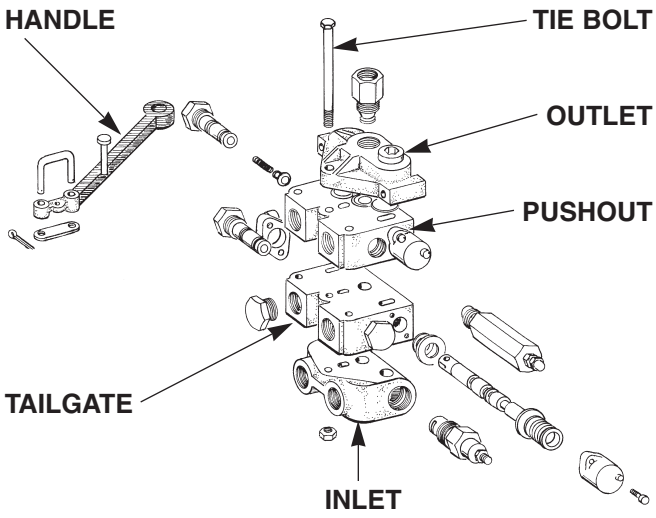
2. To separate valve sections from the inlet or outlet covers, remove the three (3) tie bolts which secure the valve sections and covers. Separate carefully, noting the location of o-ring seals.

NOTE:

Before disassembly, it is suggested that each work section be marked numerically to avoid incorrect assembly.

3. Thoroughly clean the o-ring counter bores and ground surfaces of each section.

4. To remove handle bracket remove the two capscrews securing the bracket to the work section.



NOTE:

Do not remove the spool from the valve body as the seals can be replaced externally.

5. Remove retainer plate, retainer plate washer and o-ring seal.

6. Thoroughly clean center bore.

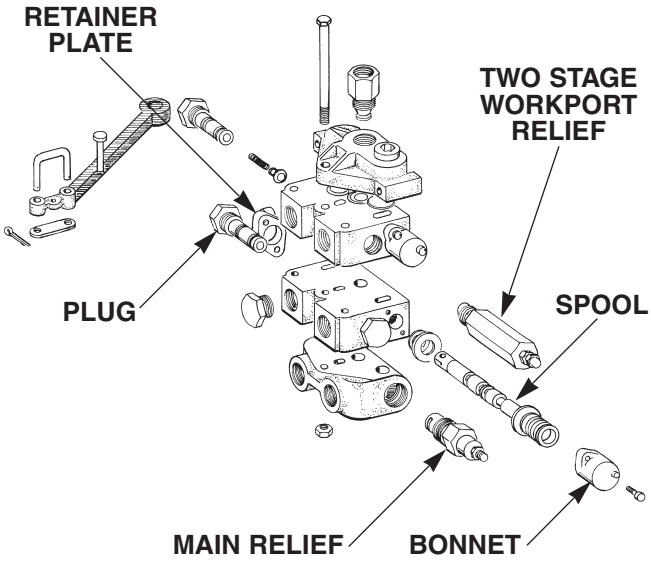
7. To remove the bonnet, remove two (2) capscrews securing the bonnet to the work section.

8. The spool positions is now exposed for inspection and repair. Remove the capscrew securing the spring collar to the valve spool.

9. Remove the spring collar and spring to expose the retainer plate, retainer plate washer and o-ring seal.

10. Thoroughly clean counterbore.

11. The removal of the two stage workport relief is accomplished in two (2) steps. First remove the signal line. Then remove the relief.



REASSEMBLY OF FRONT CONTROL VALVE

1. With all o-ring seals removed and counterbores thoroughly clean, lightly oil the new seals. Slide over spools and cartridges and insert the seals in the counterbores.

2. Reassemble parts in reverse order of disassembly.

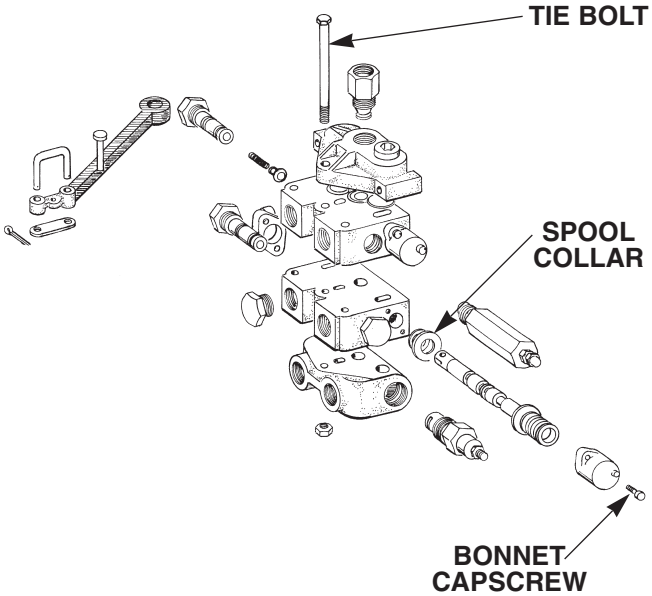
3. Torque the spool collar to 10 ft. lbs. (13.6 Nm).

4. Torque the bonnet and handle bracket capscrews to 10 ft. lbs. (13.6 Nm).

5. Replace work sections and covers with the tie bolts in the same order in which they were removed.

NOTE

Use care in replacing the work section to avoid dislodging o-rings from the counterbores.

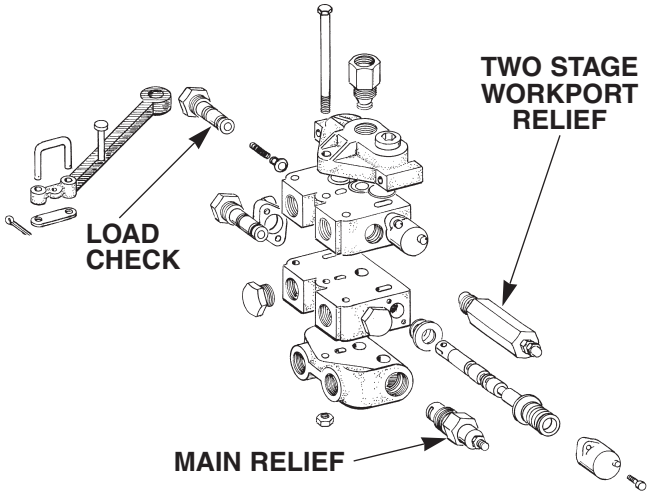


6. Torque tie bolts evenly to 32 ft. lbs. (43 Nm).

⚠CAUTION

If tie bolts are not tightened to the proper torque, valve spools may bind or stick, or cause section seals to extrude.

7. Torque value of the workport relief, main relief cartridge and load check plugs will be 20 ft. lbs. (27.2 Nm)



REINSTALLATION OF FRONT CONTROL VALVE

1. Secure the valve to the mounting bracket with the appropriate hardware.

2. Remove plugs and caps, then attach hydraulic lines.

REMOVAL OF PUSHOUT CYLINDER

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

1. Move the pushout lever to position the pushout panel approximately midway in the body.

2. Weld a lifting eye to the roof of the body.

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

3. Attach a sling connected to a lifting device capable of lifting 750 lbs. to the pushout cylinder.

4. Remove the capscrews and bearing block halves connecting the pushout panel to the cylinder.

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

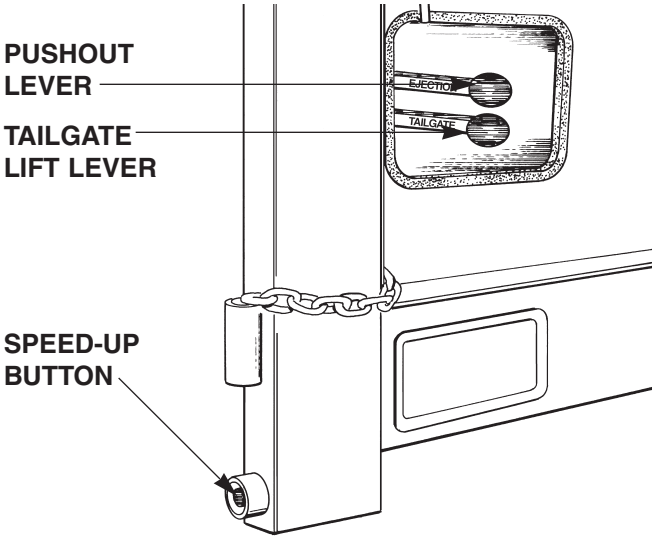
5. Move the pushout lever to slowly retract the pushout cylinder until it is completely retracted.

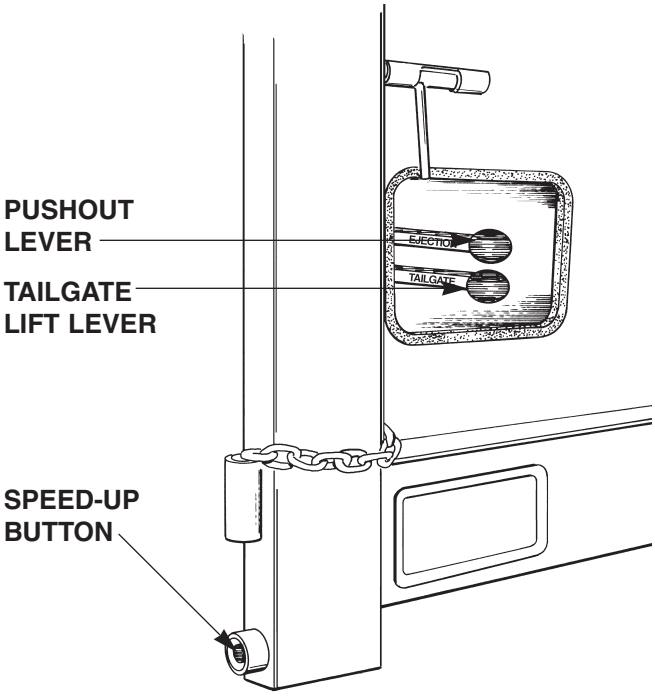
OPERATIONAL STATUS	
Truck Off	PTO Disengaged

6. Disconnect the hydraulic line to the cylinder port. Cap the hydraulic lines and the cylinder to prevent contamination of the hydraulic system.

7. Remove the cylinder end case pin.

8. Using the lifting device, lower the pushout cylinder until it is resting on the floor of the body.





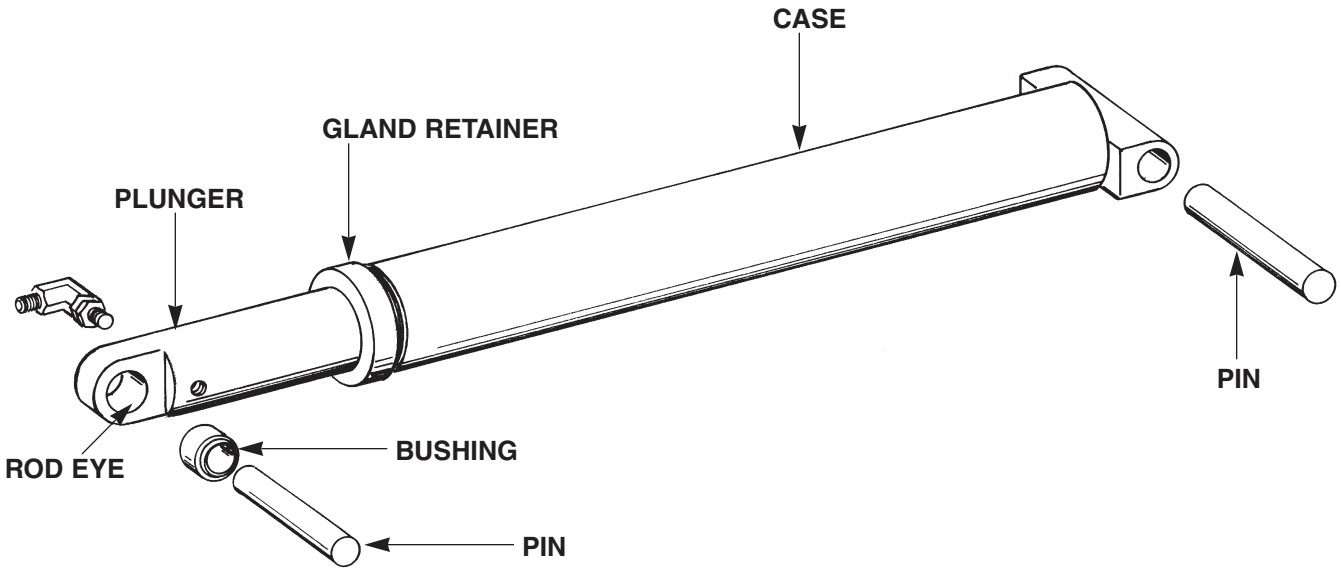
NOTE:

For more information about lifting devices and slings, refer to Sec. 4, General Repair.

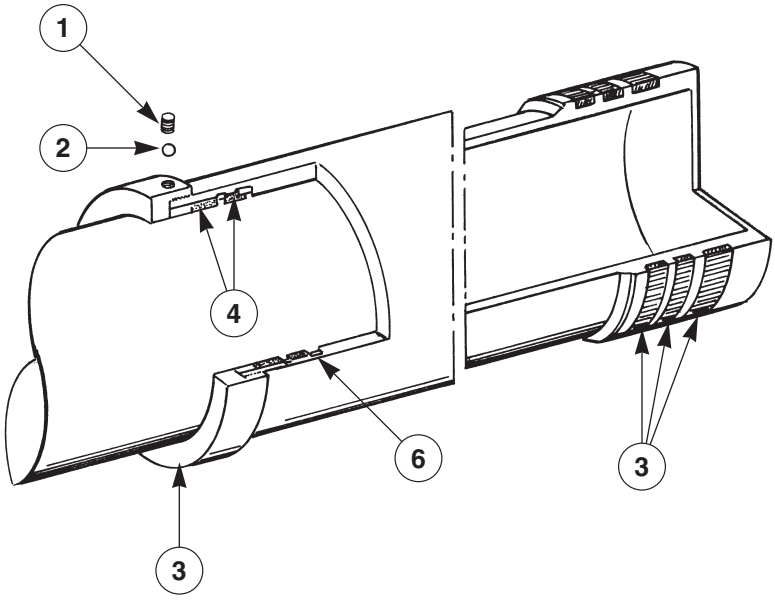
9. Attach a sling connected to a suitable lifting device with a minimum lifting capacity of 750 lbs. (341 kg).

10. Operate the lifting device slowly and guide the cylinder out of the body through the side access door. Take care during removal to avoid damaging the surrounding components or hydraulic lines.

SINGLE STAGE PUSHOUT CYLINDER



SINGLE STAGE PUSHOUT CYLINDER



SINGLE STAGE PUSHOUT CYLINDER PACKING REPLACEMENT

1. Drain the hydraulic fluid from the cylinder. Clean the outside of the cylinder prior to working on it to prevent contamination from entering the cylinder. Secure the cylinder to the floor or a workbench in a vertical position (rod end up).

2. Remove the setscrew (1) and plastic plug (2) from the head nut.

3. Remove the head nut (3) using a strap or chain wrench. If the tube turns with the head nut, tighten the next head nut slightly.

4. Using a suitable lifting device attached to the rod eye (5), pull up on the tube. The packing (4) should come out as the tube is raised. If it does not, clean off a section of the tube and wrap masking tape around it. Lower the wrapped section of tube down into the packing and then lift the tube once again.

5. Prior to installing new packing (4), clean the area thoroughly and lubricate the new packing set inside and out with an all-purpose grease.

6. If the proper size packing driver is not available, the packing may be installed by turning the head nut over, placing it on the packing and using a rubber or plastic mallet, tap the packing into place.

7. Replace the head nut (3) being careful not to overtighten.

8. Replace the plastic plug (1) and setscrew (2).

SINGLE STAGE PUSHOUT CYLINDER DISASSEMBLY

1. Prior to disassembling the cylinder, first make four clips from thin steel. These clips should be approximately .020" thick, ½" wide and 4" long. Bend each clip, at a right angle, about 1" from the end so it can hang over the edge of the tube.

2. Drain the hydraulic fluid from the cylinder. Clean the outside of the cylinder prior to working on it to prevent contamination from entering the cylinder. Secure the cylinder to the floor or a workbench in a vertical position (rod end up).

3. Remove the setscrew (1), plastic plug (2) and head nut (3). Insert a long thin screwdriver under the end of the retaining ring (6), prying it out of the groove. Using another screwdriver – place it behind the retaining ring and work your way around the cylinder – prying the ring out of the groove as you go. When you are opposite the starting point, hang one of the clips on the edge of the tube so that the long end of the clip is between the ring and the groove in the cylinder. Continue to use the screwdrivers as “pry bars” and hang the remaining clips. The clips should be equally spaced around the retaining ring.

4. Using an appropriate lifting device, raise the tube completely out of the cylinder. The retaining ring (6) will come out with the tube.

5. Clean, inspect and replace the guide and piston rings (7) as necessary. When installing new rings, the ends should be positioned on opposite sides of the tube to prevent leakage.

6. After the tube has been installed back into the case, the retaining ring (6) should be installed, packings (4) replaced and the head nut (3) reinstalled.

TELESCOPIC CYLINDER PACKING REPLACEMENT

1. Drain the hydraulic fluid from the cylinder. Clean the outside of the cylinder prior to working on it to prevent contamination from entering the cylinder. Secure the cylinder to the floor or a workbench in a vertical position (rod end up).

2. Remove the setscrew (1) and plastic plug (2) from the head nut.

3. Remove the smallest head nut (3) using a strap or chain wrench. If the tube turns with the head nut, tighten the next head nut slightly.

4. Repeat steps 2 and 3 to remove each head nut.\

5. Using a suitable lifting device attached to the rod eye (5), pull up on the tube. The packing (4) should come out as the tube is raised. If it does not, clean off a section of the tube and wrap masking tape around it. Lower the wrapped section of tube down into the packing and then lift the tube once again.

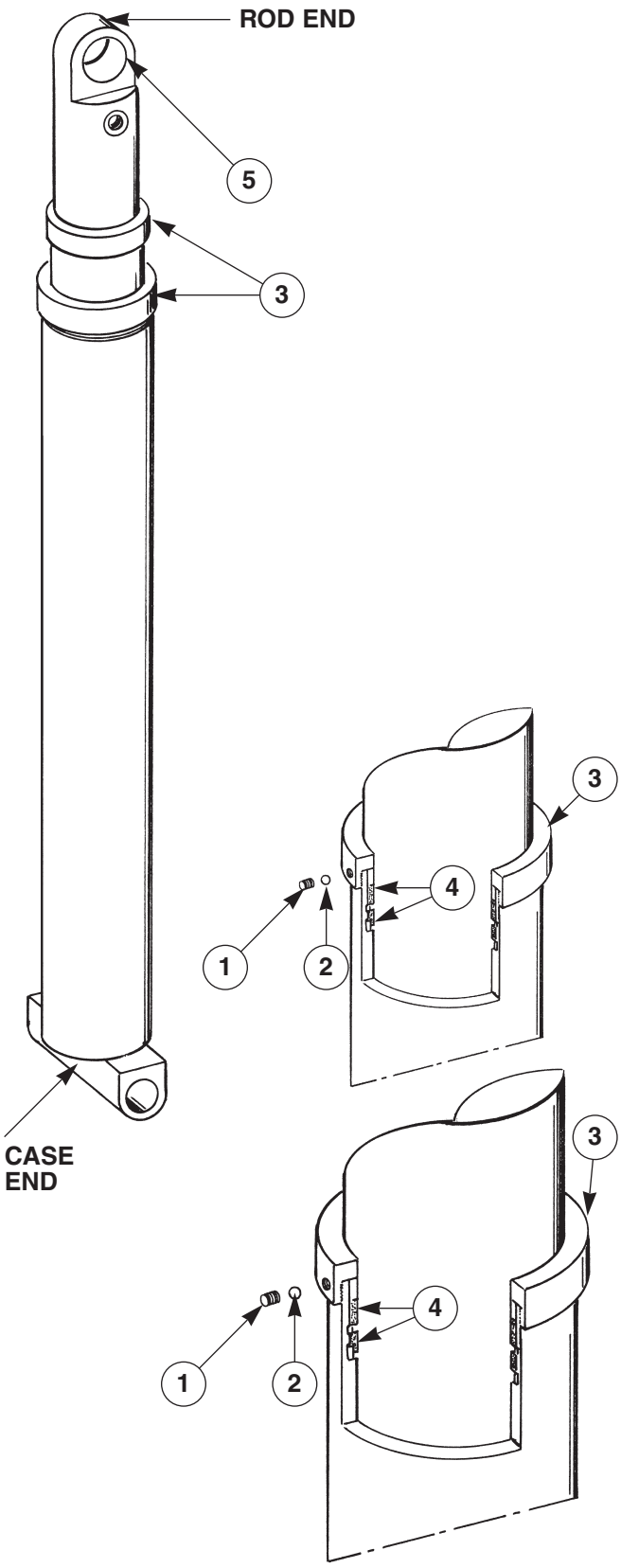
6. When removing the packing from succeeding larger stages, replace the head nut (3) on the stage directly above the section you need access to. Wrap a strap under the head nut and use it to lift the tube.

7. Prior to installing new packing (4), clean the area thoroughly and lubricate the new packing set inside and out with an all-purpose grease.

8. If the proper size packing driver is not available, the packing may be installed by turning the head nut over, placing it on the packing and using a rubber or plastic mallet, tap the packing into place.

9. Replace all of the head nuts (3) being careful not to overtighten.

10. Replace the plastic plug (2) and setscrew (3).



TELESCOPIC CYLINDER DISASSEMBLY

1. Prior to disassembling the cylinder, first make four clips from thin steel. These clips should be approximately .020" thick, ½" wide and 4" long. Bend each clip, at a right angle, about 1" from the end so it can hang over the edge of the tube.

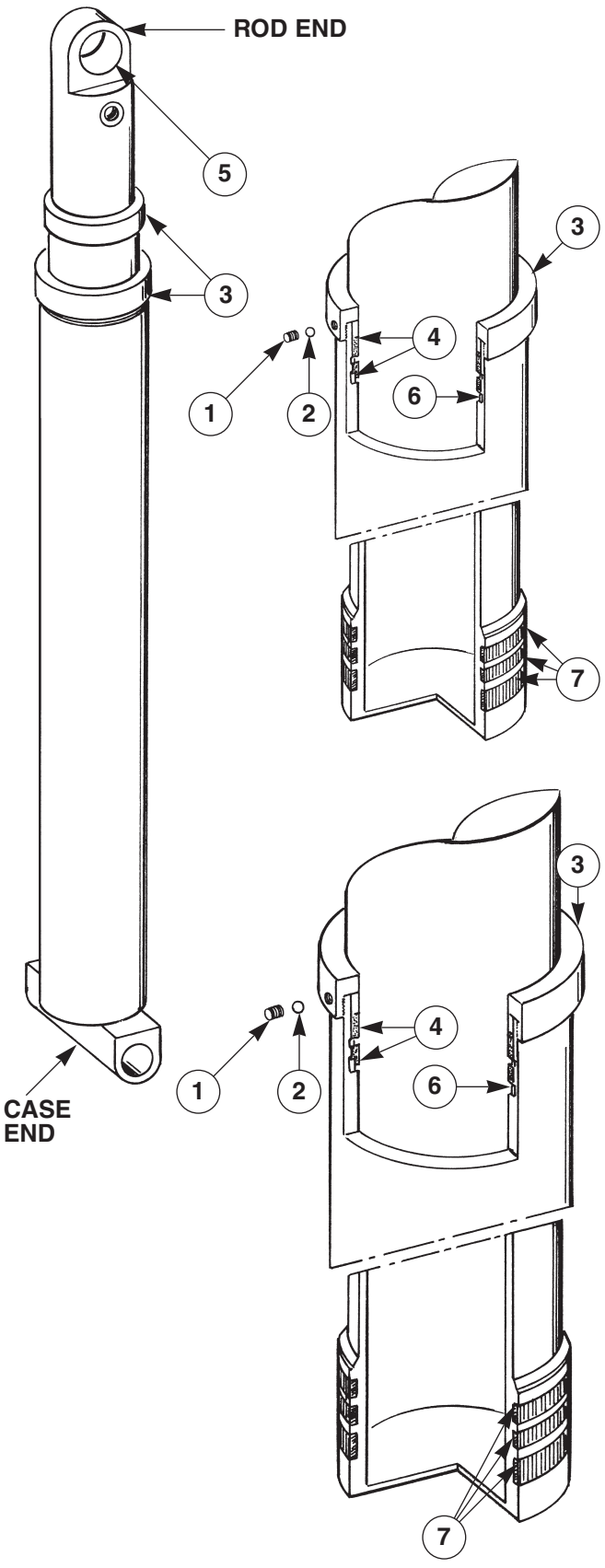
2. Drain the hydraulic fluid from the cylinder. Clean the outside of the cylinder prior to working on it to prevent contamination from entering the cylinder. Secure the cylinder to the floor or a workbench in a vertical position (rod end up).

3. Remove the setscrew (1), plastic plug (2) and head nut (3). Insert a long thin screwdriver under the end of the retaining ring (6), prying it out of the groove. Using another screwdriver – place it behind the retaining ring and work your way around the cylinder – prying the ring out of the groove as you go. When you are opposite the starting point, hang one of the clips on the edge of the tube so that the long end of the clip is between the ring and the groove in the cylinder. Continue to use the screwdrivers as "pry bars" and hang the remaining clips. The clips should be equally spaced around the retaining ring.

4. Using an appropriate lifting device, raise the tube completely out of the cylinder. The retaining ring (6) will come out with the tube.

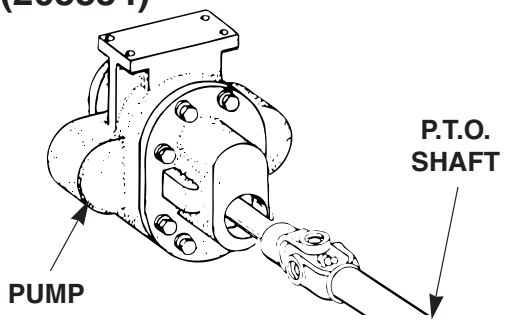
5. Clean, inspect and replace the guide and piston rings (7) as necessary. When installing new rings, the ends should be positioned on opposite sides of the tube to prevent leakage.

6. After the tubes have been installed back into the case, the retaining rings (6) should be installed, packings (4) replaced and the head nuts (3) reinstalled.



DESCRIPTION OF LEACH HYDRAULIC PUMP (203834)

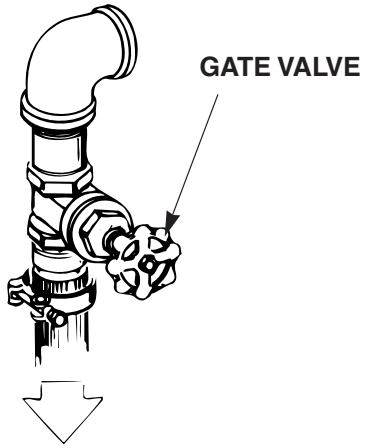
The pump which serves the complete hydraulic system is a gear type, coupled to the PTO shaft through a yoke arrangement. It is usually mounted under the body near the front end, curb side. The Leach pump can run in either direction - clockwise or counterclockwise rotation. The locations of the suction and pressure hoses are determined by the direction of rotation; it is therefore imperative to install hoses correctly.



REMOVAL OF HYDRAULIC PUMP

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Shut the gate valve at the underside of the hydraulic fluid tank.

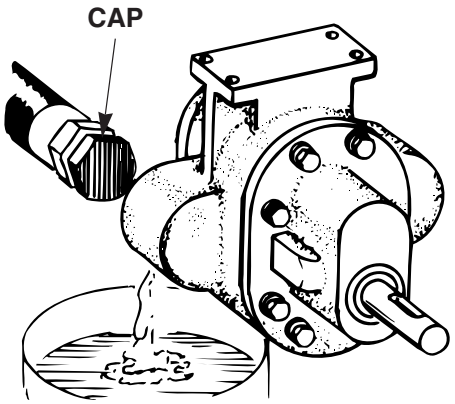


2. Remove the hose clamp.
3. Remove the pump suction line and allow the fluid to drain.

NOTE

The pump suction line (tube and hose) will also be filled with hydraulic fluid. The pump and line may be drained into an absolutely clean container and the fluid poured back into the tank.

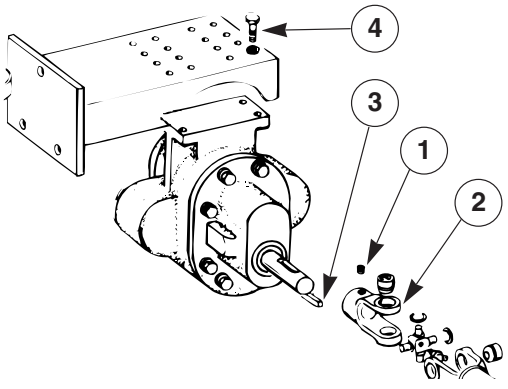
4. Disconnect the pressure hose at the pump and cap the end.



5. Loosen the setscrew (1) and free the yoke (2) from the pump shaft by telescoping the PTO drive shaft toward the PTO.

6. Remove the key (3) from the pump shaft keyway.

7. Remove the attaching hardware (4). The pump assembly may now be removed from the mounting bracket.



SERVICE AND REPAIR

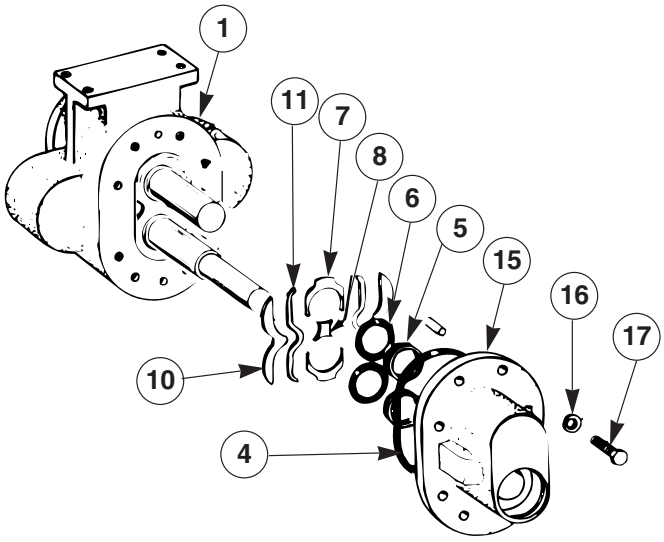
DISASSEMBLY OF THE HYDRAULIC PUMP (203834)

1. After removal, thoroughly clean the outside with solvent and a brush. Then blow dry the pump with compressed air. Scribe flange cover (15) and body (1) so they can be matched for reassembly.
2. Carefully place the pump body in a vise and remove capscrews (17) and washers (16).
3. Lift flange cover (15) off pump body and remove the o-ring (4) from the flange.
4. Remove o-ring (6) and back-up ring (5) from each gear shaft.
5. Remove top isolation plates (10), sealing strips (11), end separators (7) and center separator.
6. Remove top pressure plates (14), drive gear (12) and idler gear (13).
7. Remove the bottom pressure plate (14) by using an expandable bearing puller and lifting straight up out of the body.

NOTE:

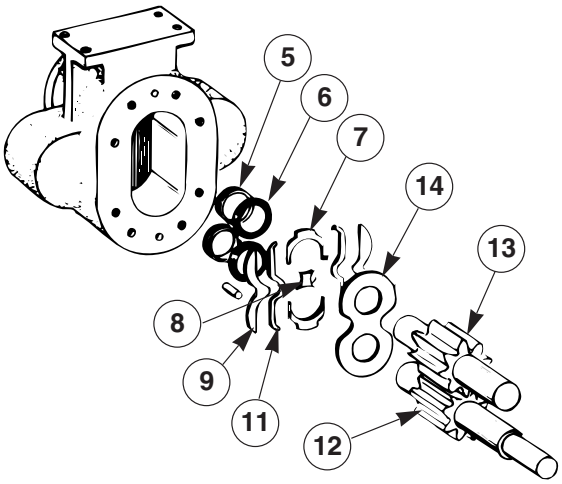
It may be necessary to use a sharp knife to remove the rolled up lapped edge that adjoins the pressure plate. Do not force or bend the pressure plate.

8. Remove the bottom isolation plates (9), sealing strips (11), end separators (7), center separator (8), back-up rings (5) and o-rings (6).
9. Clean all the internal parts with solvent and blow dry.
10. Inspect all parts carefully.



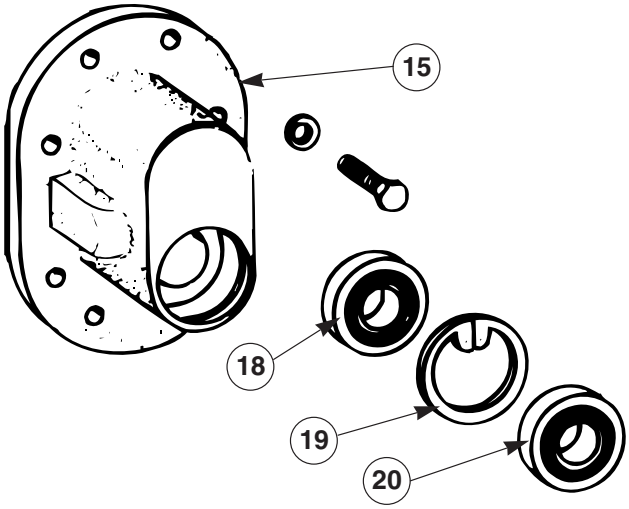
⚠WARNING

Be sure to wear eye protection.



REPLACING SHAFT SEALS ON THE HYDRAULIC PUMP

1. Remove the flange cover (15) from pump as described in steps 1-4 of the Disassembly Instructions.
2. First drive out the old wiper (20).
3. Remove snap ring (19) and then the seal (18).
4. Clean the flange cover (15) in solvent and blow dry.
5. Press in a new seal (18).
6. Install snap ring (19) and a new wiper (20).
7. Install the flange cover (15) as described in steps 12-16 of the Reassembly Instructions.



LEACH®

REASSEMBLY OF HYDRAULIC PUMP (203834)

1. Place the body (1) so the scribe mark faces you.
2. For easier assembly, use clean hydraulic fluid as a lubricant.
3. Install o-rings (6) and back-up rings (5) on the protruding ends of the bearings at the bottom of the body.
4. Examine the four isolation plates. Note that one pair is slightly different from the other pair. Choose the two that have the rounded outer edges (9) and install them in their proper location at the bottom of the body bore with the rounded edges facing down.
5. Install end separators (7), center separator (8) and sealing strips (11).
6. With the bronze side facing up, lower the bottom pressure plate (14) into place in the bottom pressure plate (14) into place in the bottom of the body bore. Do not force.
7. Install driver gear (12) by lowering carefully.
8. Install idler gear (13)
9. Install the top pressure place (14) with the bronze side facing down.
10. Install end separators (7), center separator (8), sealing strips (11) and isolation plates (10).
11. Examine the flange cover shaft seal (18) and wiper (2). If replacement is necessary, see “Seal Replacement Instructions”.
12. Install o-rings (6) and back-up rings (5) on the extended portion of the bearings inside the flange (15) plate.
13. Install o-ring (4) into the groove in the flange cover (15). Use heavy grease to hold the o-ring in place.

NOTE:

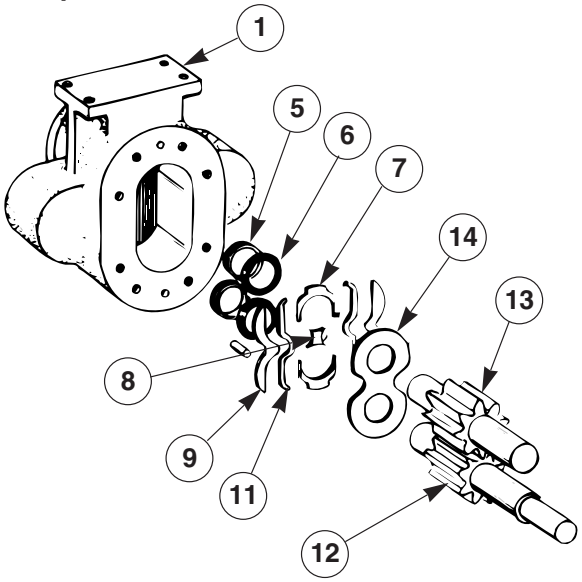
Coat the drive gear shaft extension with clean, heavy grease to protect the seal lip as the seal slides over the shaft.

14. Slide the flange cover (15) down on the drive gear (12) until it touches the dowels (2) in the body.

NOTE:

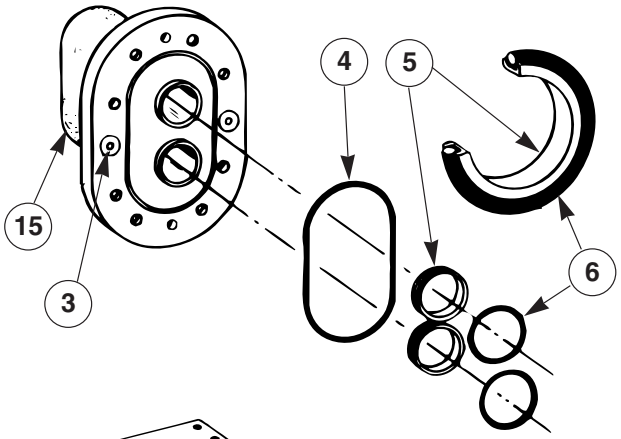
Use extreme care when seating the flange cover against the body. If not pressed down carefully, the extended portion of the flange cover bearings can pinch the sealing strips.

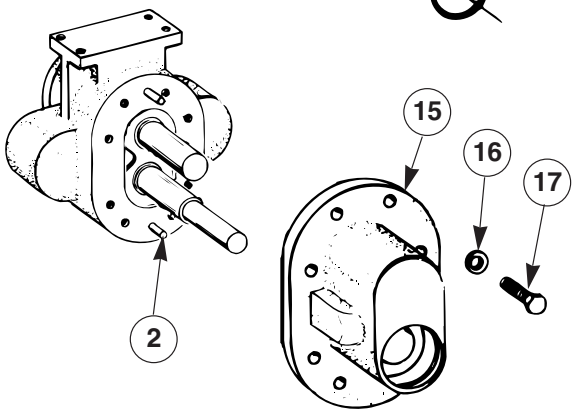
15. Insert washer (16) and capscrews (17) into the holes in the flange cover (15). Tighten opposite and even to 80 foot pounds of torque.
16. Test the pump by using an adjustable wrench with a key installed in the drive gear. When attempting to turn the shaft, it should feel tight with a maximum of 5 to 10 foot pounds of torque. If the shaft does not turn properly disassemble, find the problem, and carefully reassemble.



NOTE:

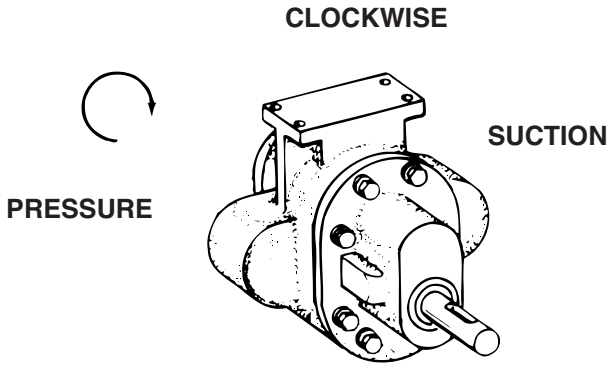
The check valves (3) located in the flange cover (15) are not replaceable. They are only available as part of the flange cover.





INSTALLATION OF HYDRAULIC PUMP (203834)

OPERATIONAL STATUS	
Truck Off	PTO Disengaged



1. Install the pump in the reverse order of removal. MAKE SURE suction and pressure lines are installed correctly for pump rotation. Tighten all mounting hardware and hose clamps.

2. Be sure to re-install any shaft guards that may have been removed.

NEW PUMP PREPARATION

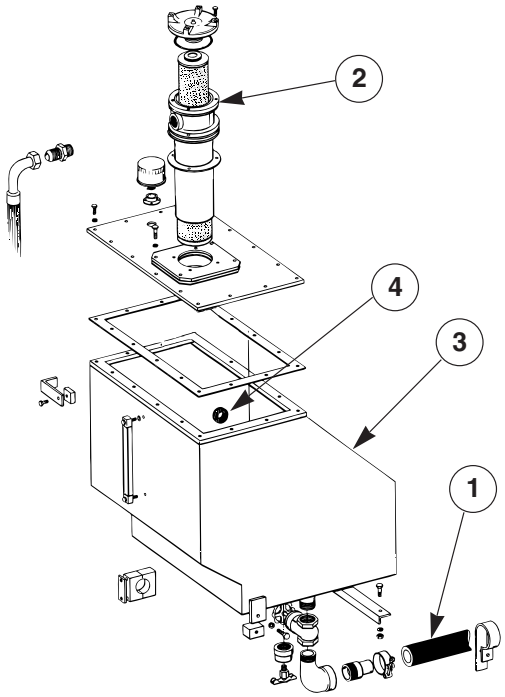
Before installing a new pump, refer to Sec. 6, PREVENTIVE MAINTENANCE and the following. This will prevent contamination of the new pump.

1. Remove and clean the hydraulic tank strainer (1).

2. Change the filter element (2).

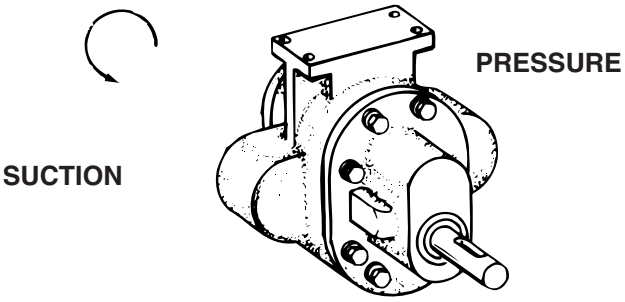
3. Drain and flush the hydraulic tank as described in Sec. 6, PREVENTIVE MAINTENANCE (3).

4. Clean the magnetic plug (4).



TESTING A NEW PUMP

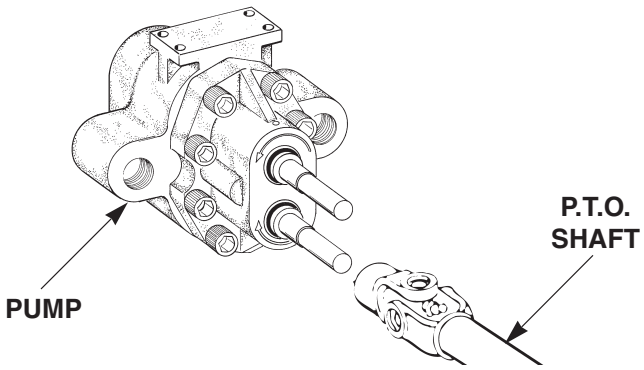
OPERATIONAL STATUS			
Truck Running	PTO Engaged	Sol. Sw.	On



After installing a new pump, check for correct cycle time and main line pressure as described in Sec. 7, CHECK-OUT.

DESCRIPTION OF LEACH HYDRAULIC PUMP (307451-01)

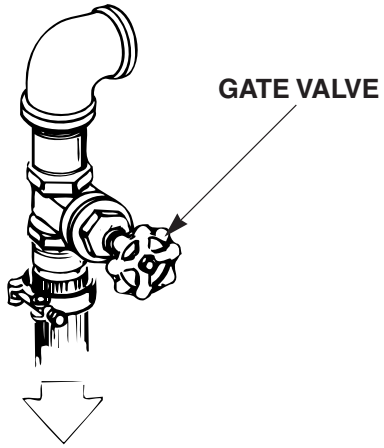
The pump which serves the complete hydraulic system is a gear type, coupled to the PTO shaft through a yoke arrangement. It is usually mounted under the body near the front end, curb side. The Leach pump can accommodate PTO shafts that turn either clockwise or counterclockwise rotation. The locations for the suction and pressure hoses are clearly indicated by markings in the housing.



REMOVAL OF HYDRAULIC PUMP

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Shut the gate valve at the underside of the hydraulic fluid tank.

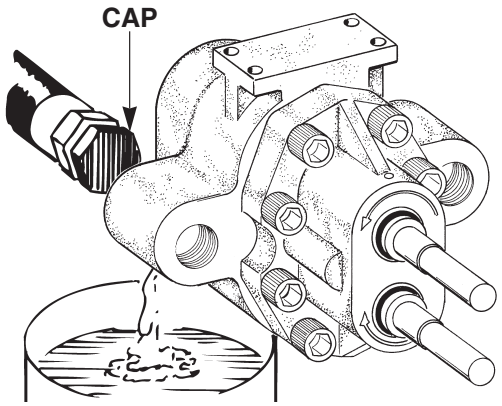


2. Remove the hose clamp.
3. Remove the pump suction line and allow the fluid to drain.

NOTE

The pump suction line (tube and hose) will also be filled with hydraulic fluid. The pump and line may be drained into an absolutely clean container and the fluid poured back into the tank.

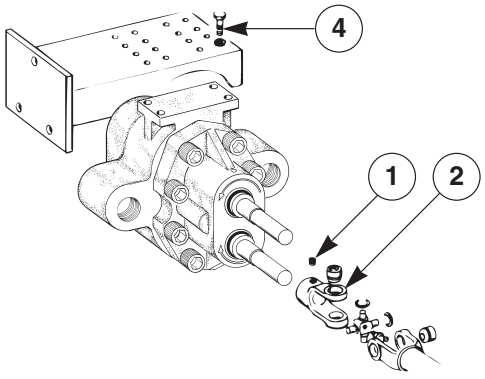
4. Disconnect the pressure hose at the pump and cap the end.



5. Loosen the setscrew (1) and free the yoke (2) from the pump shaft by telescoping the PTO drive shaft toward the PTO.

6. Remove the key (3) from the pump shaft keyway.

7. Remove the attaching hardware (4). The pump assembly may now be removed from the mounting bracket.



DISASSEMBLY OF HYDRAULIC PUMP (307451-01)

1. After removal, thoroughly clean and dry the pump. Scribe the rear housing (1) and the front housing (9) so they are marked for reassembly.
2. Carefully place the pump body in a vise and remove capscrews (10) and washers (11).
3. Lift the front housing (9) from the rear housing (1) and remove o-ring (8). Be sure dowels (7) do not fall out.
4. Remove pressure balance (2) and pressure plate (6).
5. Remove keys (5) from the gears (4). Remove gears (4), pressure plate (3) and pressure balance (2).

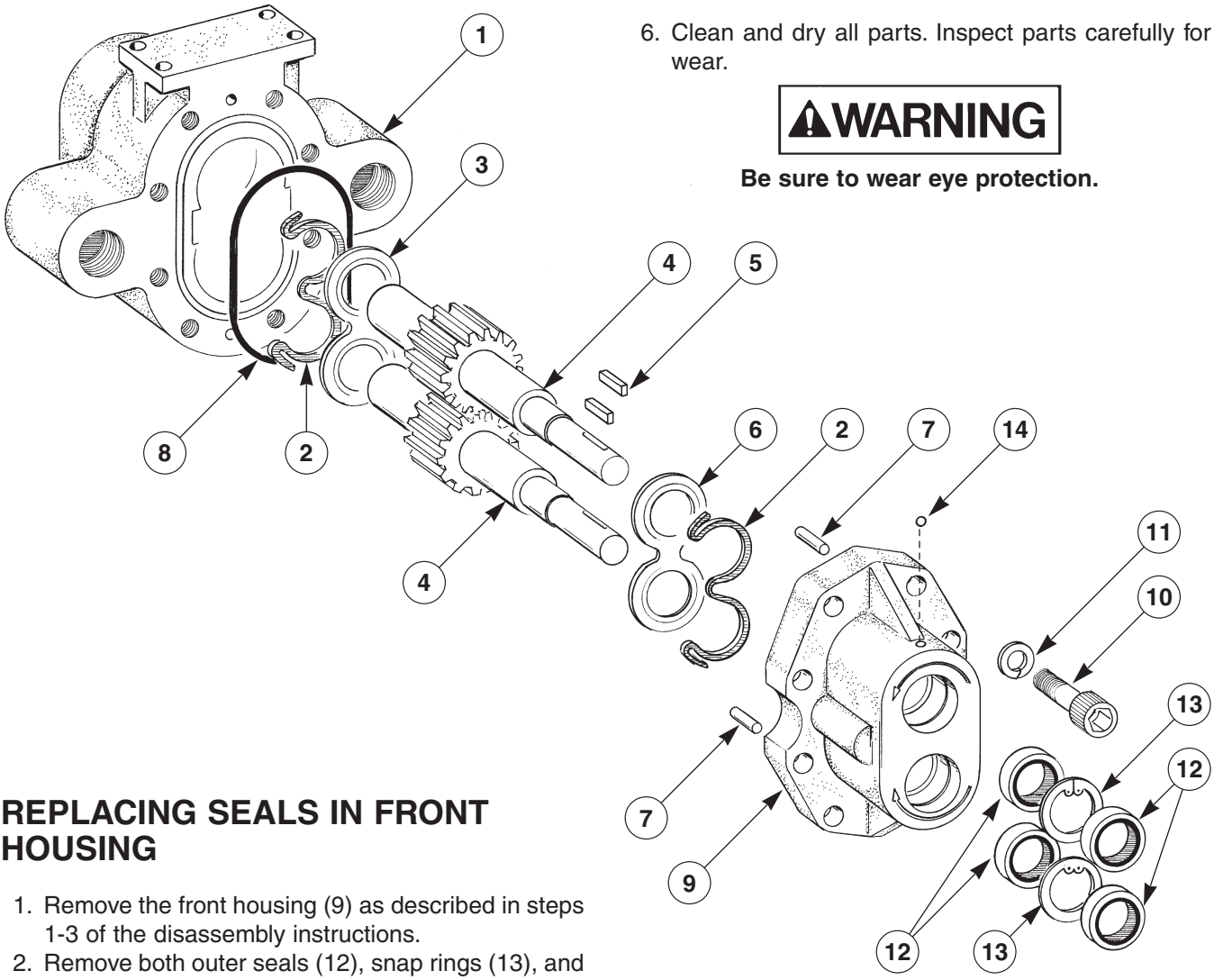
NOTE:

Care should be taken not to bend or damage the pressure plates.

6. Clean and dry all parts. Inspect parts carefully for wear.

⚠WARNING

Be sure to wear eye protection.



REPLACING SEALS IN FRONT HOUSING

1. Remove the front housing (9) as described in steps 1-3 of the disassembly instructions.
2. Remove both outer seals (12), snap rings (13), and both inner seals (12).
3. Clean seal bores.
4. Install both inner seals (12) and both snap rings (13). Seal lips are to be installed towards inside of pump.
5. Pack grease into both seal bores to cover the inner seals.
6. Install both outer seals (12). Pack grease into both seal bores to cover the seals. Seal lips are to be installed towards inside of pump.

REASSEMBLY OF HYDRAULIC PUMP (307451-01)

1. Place the rear housing (1) with the opening up and the scribe mark visible.

2. For easier assembly, use clean hydraulic fluid as a lubricant.

3. Install pressure balance (2) and pressure plate (3) into rear housing (1).

NOTE:

Pressure plates must be assembled with the traps (opening) to the outlet side of the pump.

4. Carefully lower gears (4) into the rear housing (1). Install the gears one at a time.

5. Install pressure plate (6) and pressure balance (2).

6. Install o-ring (8) into groove in rear housing (1).

7. Lubricate the gear shaft extensions with grease to protect lip seals.

8. Install seals (12) and snap rings (13) into front housing (9) as described in steps 1-6 of the replacing seals instructions.

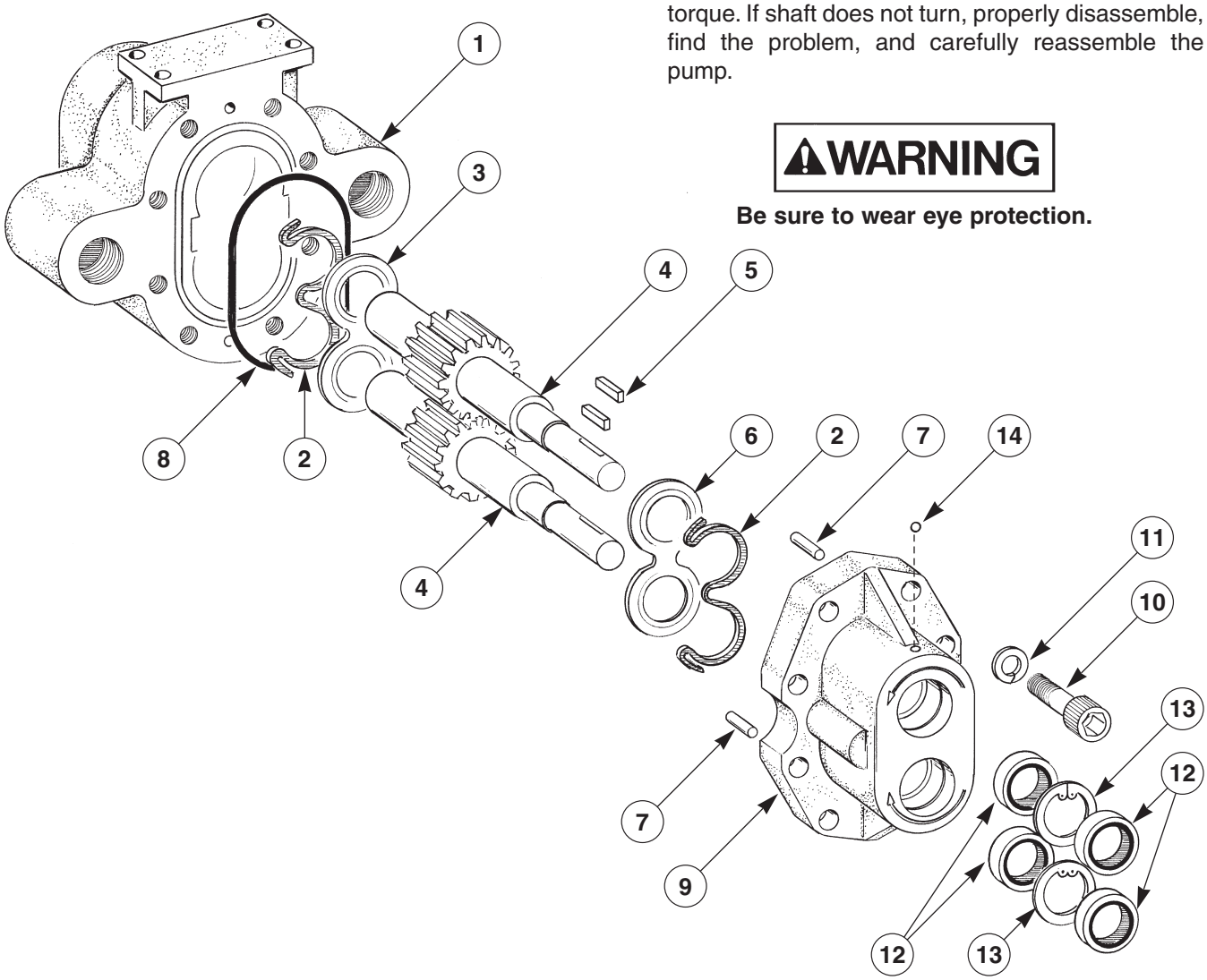
9. Install dowels (7) into holes in rear housing (1).

10. Carefully lower front housing (9) (with seals installed) onto rear housing (1). Insert washers (11) and capscrews (10). Tighten opposite and even to 80 ft. lbs.

11. Test the pump by turning on one gear shaft. The pump should turn with a maximum of 10 ft. lbs. of torque. If shaft does not turn, properly disassemble, find the problem, and carefully reassemble the pump.

⚠WARNING

Be sure to wear eye protection.



INSTALLATION OF HYDRAULIC PUMP (307451-01)

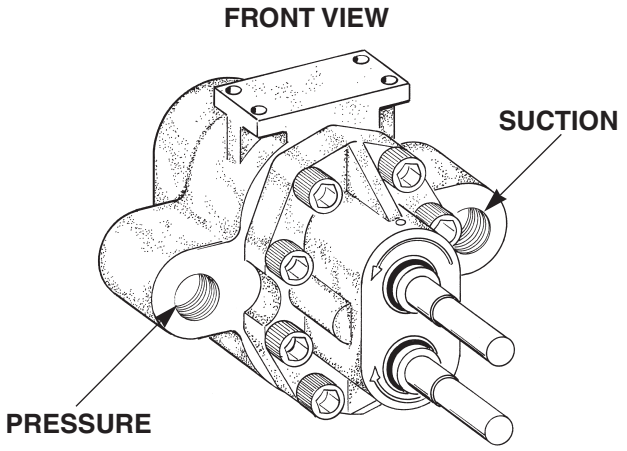
OPERATIONAL STATUS	
Truck Off	PTO Disengaged

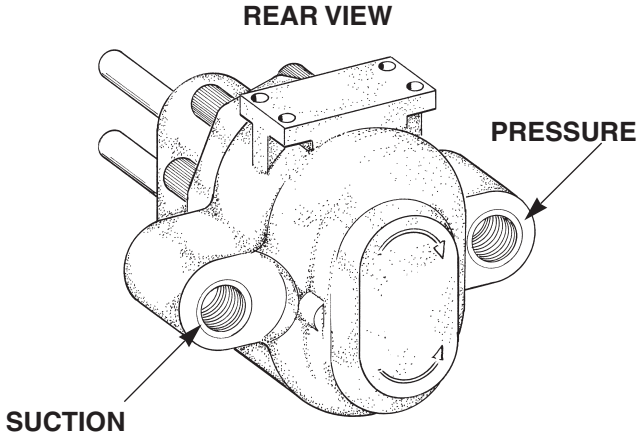
1. Install pump in the reverse order of removal.

NOTE:

Fill pump with clean hydraulic oil up to the threads of the ports for the pressure and suction hoses. Make sure the hoses are installed correctly.

2. Be sure to reinstall any shaft guards that may have been removed.

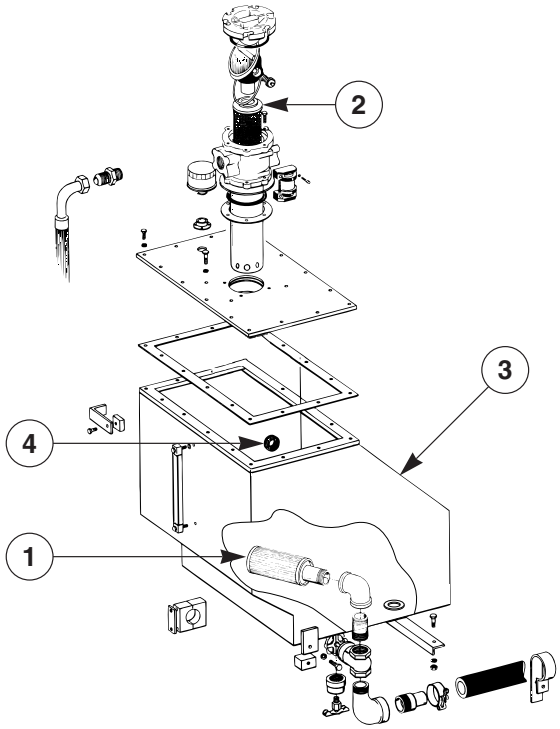




NEW PUMP PREPARATION

Before installing a new pump, refer to Sec. 6, PREVENTIVE MAINTENANCE and the following. This will prevent contamination of the new pump.

1. Remove and clean the hydraulic tank strainer (1).
2. Change the filter element (2).
3. Drain and flush the hydraulic tank as described in Sec. 6, PREVENTIVE MAINTENANCE (3).
4. Clean the magnetic plug (4).



TESTING A NEW PUMP

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Sol. Sw. On

After installing a new pump, check for correct cycle time and main line pressure as described in Section 7, CHECK-OUT.

DESCRIPTION OF ELECTRICAL SYSTEM

The packer electrical system includes all of the body running and marker lights, operational speed up switches, the operator ready and back-up warning buzzers, and all interconnected wiring, as shown on the accompanying wiring diagram.

TESTING

To locate a defective component or break in the wiring, perform a continuity check across the between suspected components as described in Sec. 4, GENERAL REPAIR.

REPAIR

Repair of the electrical system is limited to the replacement of burned out light bulbs and other defective parts or wiring.

INSPECTION

1. Operate all light switches and pushbutton controls to insure that they are operating normally.
2. Check all wiring for breaks, frayed or worn insulation and loose terminal connections.

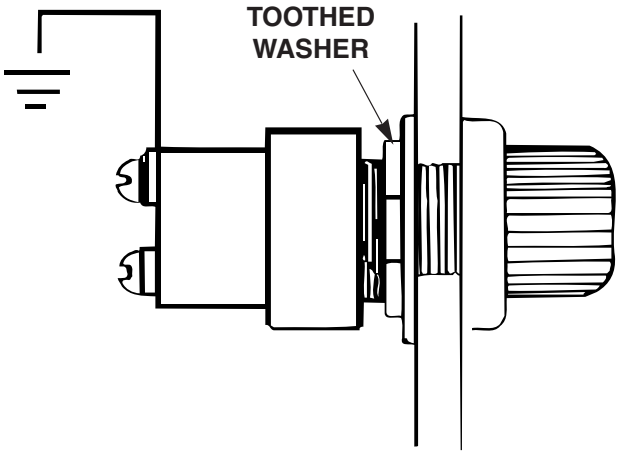
GROUNDING THE ELECTRICAL SYSTEM

To insure a proper ground for the electrical system, make sure an internal lockwasher is installed in the following areas:

1. Buzzer System - between the pushbutton and bracket.
2. Speed Up System - between the pushbutton and bracket.
3. Back Up Alarm - between the backup alarm and bracket.
4. Taillight - between the light and bracket.

The internal lockwasher will bite into the metal and ensure a positive ground.

TYPICAL EXAMPLE

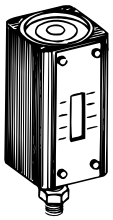


SERVICE TOOLS

GENERAL

The service tools shown will be required for some service and repair procedures. These tools are available from your local authorized Leach distributor.

The actual use of each tool is described in Section 9, Service and Repair.



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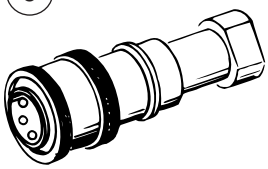

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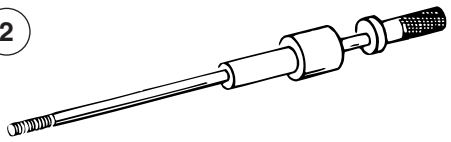

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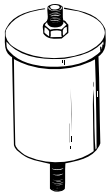

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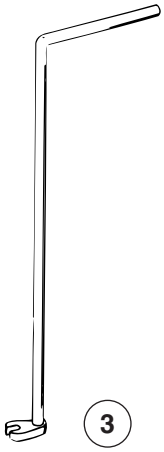

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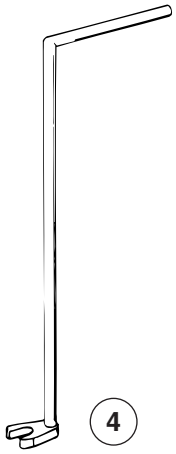

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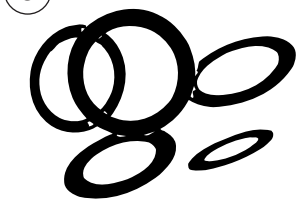

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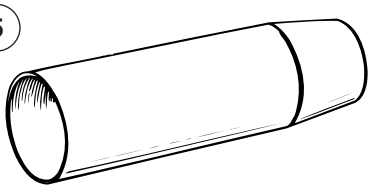

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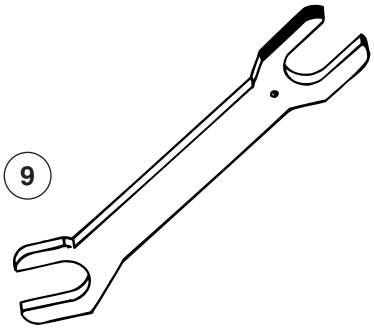

9

SERVICE TOOLS

NO.	PART NO.	DESCRIPTION	EXPLANATION	UNIT
1	30522	Pressure Gauge	To measure system pressure	All except FL104/Beta
2	T-SK-793-100	Pin Puller	Remove pivot pins	All
3	T-2R-1006-2	Tube Nut Wrench 1½"	Remove/Install tube nut	2R/2RII
4	T-2R-1313-2	Tube Nut Wrench 2"	Remove/Install tube nut	2R/2RII
5	T-SR-9541-20	Pump Shaft Seal Tool	Install seal	All
6	100368	Snap Connector	Quick coupling for pressure gauges	All
7	402325	Pivot Puller	Remove upper carrier pivots	2RII
8	103081	O-Ring Kit	Various size o-rings	All except FL104
9	405-638	Carrier Cylinder Fitting Wrench	Remove/install fittings	2RII